

**TITLE 18. ENVIRONMENTAL QUALITY  
CHAPTER 9. DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER POLLUTION CONTROL**

**ARTICLE 1. AQUIFER PROTECTION PERMITS - GENERAL PROVISIONS**

**R18-9-101. Definitions**

In addition to the definitions established in A.R.S. § 49-201, the following terms apply to Articles 1, 2, and 3 of this Chapter:

1. “Aggregate” means a clean graded hard rock, volcanic rock, or gravel of uniform size, between 3/4 inch to and 2 1/2 inches in diameter, offering 30% percent or more void space, washed or prepared to be free of fine materials that will impair absorption surface performance, and has a hardness value of three or greater on the Moh’s Scale of Hardness (can scratch a copper penny).
2. “Alert level” means a ~~numeric value, or limit expressing a concentration of a pollutant or a physical or chemical property of a pollutant, that is~~ established in an individual permit and serves as an early warning indicating a potential violation of an Aquifer Water Quality Standard at the applicable point of compliance or a permit condition including a concentration of a pollutant or a physical or chemical property of a pollutant. Exceeding an alert level may require adjustment of permit conditions or appropriate actions as required by a contingency plan.
3. “AQL” means an aquifer quality limit and is a permit limit set for aquifer water quality measured at the point of compliance that either represents an Aquifer Water Quality Standard or, if an Aquifer Water Quality Standard for a pollutant is exceeded in an aquifer at the time of permit issuance, represents the ambient water quality for that pollutant.
  - a. Exceeding an AQL set at an Aquifer Water Quality Standard constitutes exceeding the Aquifer Water Quality Standard.
  - b. Exceeding an AQL set higher than an Aquifer Water Quality Standard constitutes further degradation of the aquifer.
- ~~3.4.~~ “Aquifer Protection Permit” means an individual permit or a general permit issued under A.R.S. §§ 49-203, 49-241 through 49-252, and Articles 1, 2, and 3 of this Chapter.
- ~~4.5.~~ “Aquifer Water Quality Standard” means a standard established under A.R.S. §§ 49-221 and 49-223.
6. “AZPDES” means the Arizona Pollutant Discharge Elimination System, which is the state program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment and biosolids requirements under A.R.S. Title 49, Chapter 2, Article 3.1 and 18 A.A.C. 9, Articles 9 and 10.
- ~~5.7.~~ “BADCT” means the best available demonstrated control technology, process, operating method, or other alternative to achieve the greatest degree of discharge reduction determined for a facility by the Director under A.R.S. § 49-243.
- ~~6.~~ “Daily flow rate” means ~~the average daily flow calculated for the month that has the highest total flow during a calendar year.~~
8. “Chamber technology” means a method for dispersing treated wastewater into soil from an on-site wastewater treatment facility by one or more manufactured leaching chambers with an open bottom and louvered, load-bearing sidewalls that substitute for an aggregate-filled trench described in R18-9-E302.
9. “CMOM Plan” means the Capacity, Management, Operations, and Maintenance Plan, a written plan that describes the activities and actions a permittee will take to ensure that the capacity of the sewage collection system, when unobstructed, is sufficient to convey the peak wet weather flow through each reach of sewer, and provides for the management, operation, and maintenance of the permittee’s sewage collection system.
- ~~7.10.~~ “Design capacity” means the volume of a containment feature at a discharging facility that accommodates all permitted flows and meets all Aquifer Protection Permit conditions, including allowances for appropriate peaking and safety factors to ensure sustained reliable operation.
- 8.11. “Design flow” means the daily flow rate a facility is designed to accommodate on a sustained basis while satisfying all permit discharge limitations, ~~and~~ treatment, and operational requirements. The design flow incorporates is used with appropriate peaking and safety factors to ensure sustained, reliable operation.
- ~~9.12.~~ “Direct reuse site” means an area where reclaimed water is applied or impounded.

- ~~10.13.~~ “Disposal works” means the system for disposing of treated wastewater generated by the treatment works of a sewage treatment facility or on-site wastewater treatment facility, by surface or subsurface methods. Disposal works do not include activities regulated under 18 A.A.C. 9, Article 7.
- ~~11.14.~~ “Drywell” means a well which is a bored, drilled or driven shaft or hole whose depth is greater than its width and is designed and constructed specifically for the disposal of storm water. Drywells do not include class 1, class 2, class 3 or class 4 injection wells as defined by the Federal Underground Injection Control Program (P.L. 93-523, part C), as amended. A.R.S. § 49-331(3)
- ~~15.~~ “ Dwelling ” means real property upon which there has been constructed or is to be constructed any building, structure or improvement which is designed for either single one-family or single two-family residential purposes or activities related thereto, including an apartment in a horizontal property regime or other condominium. A.R.S. § 33-1002(1) A dwelling includes a mobile or manufactured home used as a residence.
- ~~12.16.~~ “Final permit determination” means a written notification to the applicant of the Director’s final decision whether to issue or deny an Aquifer Protection Permit or an amendment to an individual permit.
- ~~13.17.~~ “Groundwater Quality Protection Permit” means a permit issued by the Arizona Department of Health Services or the Department before September 27, 1989 that regulates the discharge of pollutants that may affect groundwater.
- ~~14.18.~~ “Injection well” means a well that receives a discharge through pressure injection or gravity flow.
- ~~15.19.~~ “Intermediate stockpile” means an accumulation of in-process material not intended for long term storage and in transit from one process to another at ~~the a~~ a mining site. Intermediate stockpile does not include metallic ore concentrate stockpiles or feedstocks not originating at the mining site.
- ~~20.~~ “Land treatment facility” means an operation designed to improve the quality of waste, wastewater, or both, placed on the land surface to perform part or all of the treatment. A land treatment facility includes biosolids processing and composting, but not land application.
- ~~16.21.~~ “Mining site” means a site assigned one or more of the following primary Standard Industrial Classification Codes: 10, 12, 14, 32, and 33, and includes noncontiguous properties owned or operated by the same person and connected by a right-of-way controlled by that person to which the public is not allowed access.
- ~~22.~~ “Nitrogen Management Area” means an area designated by the Director where measures are prescribed on an area-wide basis to control sources of nitrogen, including cumulative discharges from on-site wastewater treatment facilities, that threaten to cause or have caused an exceedance of the Aquifer Water Quality Standard for nitrate.
- ~~17.23.~~ “Notice of Disposal ” means a document submitted to the Arizona Department of Health Services or the Department before September 27, 1989, giving notification of ~~the a pollutant~~ a pollutant discharge of pollutants that may affect groundwater.
- ~~24.~~ “NPDES” means the National Pollutant Discharge Elimination System, which is the national program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits, and imposing and enforcing pretreatment and biosolids requirements under sections 307 (33 U.S.C. 1317), 318 (33 U.S.C. 1328), 402 (33 U.S.C. 1342), and 405 (33 U.S.C. 1345) of the Clean Water Act.
- ~~18.25.~~ “On-site wastewater treatment facility” means a conventional septic tank system or alternative system installed at a site to treat and dispose of wastewater, predominantly of human origin, generated at that site. An on-site wastewater treatment facility does not include;
- a. ~~a~~ A pre-fabricated, manufactured treatment works that typically uses an activated sludge unit process and has a design flow of 3000 gallons per day or more; ~~or~~
  - b. A wastewater treatment facility with a design flow 3,000 gpd or more serving multiple lots in a subdivision where the lots are separately owned.
- ~~19.26.~~ “Operational life” means the designed or planned useful period during which a facility remains operational while ~~continuing to be~~ being subject to permit conditions, including closure requirements. Operational life does not include post closure activities.
- ~~20.27.~~ “Pilot project” means a short term, limited scale test designed to gain information regarding site conditions, project feasibility, or application of a new technology.
- ~~21.28.~~ “Process solution” means a pregnant leach solution, barren solution, raffinate, ~~and or~~ other ~~solutions~~ solution uniquely associated with the mining or metals recovery process.
- ~~22.29.~~ “Residential soil remediation level” means the applicable predetermined standard established in 18

A.A.C. 7, Article 2, Appendix A.

30. “Seasonal high water table” means the free surface representing the highest point of groundwater rise within an aquifer due to seasonal water table changes over the course of a year.
- ~~23.31~~ “Setback” means a minimum horizontal distance maintained between a feature of a discharging facility and a potential point of impact.
- ~~24.32~~ “Sewage” means untreated wastes from toilets, baths, sinks, lavatories, laundries, and other plumbing fixtures, and waste pumped from septic tanks in places of human habitation, employment, or recreation. Sewage does not include gray water as defined in R18-9-701(4), if the gray water is reused according to 18 A.A.C. 9, Article 7.
- ~~25.33~~ “Sewage collection system” means a system of pipelines, conduits, manholes, pumping stations, force mains, and all other structures, devices, and appurtenances that collect, contain, and conduct sewage from its sources to the entry of a sewage treatment facility or on-site wastewater treatment facility serving sources other than a single residence dwelling.
- ~~26.34~~ “Sewage treatment facility” means a plant or system for sewage treatment and disposal, except for an on-site wastewater treatment facility, that consists of treatment works, disposal works, and appurtenant pipelines, conduits, pumping stations, and related subsystems and devices. and does not include components of the sewage collection system or reclaimed water distribution system.
- ~~27.35~~ “Surface impoundment” means a pit, pond, or lagoon with a surface dimension equal to or greater than its depth, and used for the storage, holding, settling, treatment, or discharge of liquid pollutants or pollutants containing free liquids.
- ~~28.36~~ “Tracer” means a substance, such as a dye or other chemical, used to change the characteristic of water or some other fluid to detect movement.
- ~~29.37~~ “Tracer study” means a test conducted using a tracer to measure the flow velocity, hydraulic conductivity, flow direction, hydrodynamic dispersion, partitioning coefficient, or other property of a hydrologic system.
38. “Treatment works” means a plant, device, unit process, or other works, regardless of ownership, used for treating, stabilizing, or holding municipal or domestic sewage in a sewage treatment facility or on-site wastewater treatment facility.
- ~~30.39~~ “Typical sewage” means sewage in which the total suspended solids (TSS) content does not exceed 430 mg/l, the five-day biochemical oxygen demand (BOD) does not exceed 380 mg/l, the total nitrogen does not exceed 53 mg/l, and the content of fats, oils, and greases (FOG) oil and grease does not exceed 75 mg/l.
- ~~31.40~~ “Underground storage facility” means a constructed underground storage facility or a managed underground storage facility. A.R.S. § 45-802.01(20)
- ~~32.41~~ “Waters of the United States” means:
- a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
  - b. All interstate waters, including interstate wetlands;
  - c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any waters:
    - i. That are or could be used by interstate or foreign travelers for recreational or other purposes;
    - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    - iii. That are used or could be used for industrial purposes by industries in interstate commerce;
  - d. All impoundments of waters defined as waters of the United States under this definition;
  - e. Tributaries of waters identified in subsections ~~(32)(a)~~ (40)(a) through (d);
  - f. The territorial sea; and
  - g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subsections ~~(32)(a)~~ (40)(a) through (f).

### **R18-9-103. Class Exemptions**

Class exemptions. In addition to the classes or categories of facilities listed in A.R.S. § 49-250(B), the following classes or categories of facilities are exempt from the Aquifer Protection Permit requirements of ~~in~~ Articles 1, 2, and 3 of this Chapter:

1. Facilities that treat, store, or dispose of hazardous waste and have been issued a permit or have interim status, under the Resource Conservation and Recovery Act (P.L. 94-580; 90 Stat. 2796; 42 U.S.C. 6901 et. seq., as amended), or have been issued a permit according to the hazardous waste management rules adopted under A.R.S. § 49-922;
2. Underground storage tanks that contain a regulated substance as defined in A.R.S. § 49-1001;
3. Facilities for the disposal of solid waste, as defined in A.R.S. § 49-701.01, that are located in unincorporated areas and receive solid waste from four or fewer households; and
4. Land application of biosolids in compliance with 18 A.A.C. 9, ~~Article~~ Articles 9 and 10.

### **R18-9-104. Transition from Notices of Disposal and Groundwater Quality Protection Permitted Facilities**

- ~~A. A person who filed a Notice of Disposal or received a Groundwater Quality Protection Permit shall notify the Department before any cessation. The Director shall specify any measure to be taken by the person to prevent a violation of an Aquifer Water Quality Standard at the point of compliance, determined by the criteria established in A.R.S. § 49-244.~~
- B. A person who ~~owns~~ owned or operated a facility, for which a Notice of Disposal was filed or a Groundwater Quality Protection Permit was issued, ~~or who owns or operates a facility required to obtain an Aquifer Protection Permit~~ shall, within 90 days from the date on the Director's notification, submit an application for an Aquifer Protection Permit or a closure plan as specified under A.R.S. § 49-252 and shall obtain a permit for continued operation or for closure of the facility, or a clean closure approval. Failure to submit an application as required terminates continuance of the Notice of Disposal or Groundwater Quality Protection Permit.

### **R18-9-105. Permit Continuance of Permits**

- A. Continuance.
1. Groundwater Quality Protection Permits.
    - a. Subject to the other provisions of R18-9-104 and this Section, a Groundwater Quality Protection Permit issued before September 27, 1989 is valid according to the terms of the permit until replaced by an Aquifer Protection Permit issued by the Department.
    - b. A person who owns or operates a facility to which a Groundwater Quality Protection Permit was issued is in compliance with Articles 1, 2, and 3 of this Chapter and A.R.S. Title 49, Chapter 2, Article 3, if the person:
      - i. Meets the conditions of the Groundwater Quality Protection Permit; and
      - ii. Is not causing or contributing to the violation of any Aquifer Water Quality Standard at a point of compliance, determined by the criteria in A.R.S. § 49-244.
  2. Notice of Disposal. A person who owns or operates a facility for which a Notice of Disposal was filed before September 27, 1989 complies with Articles 1, 2, and 3 of this Chapter and A.R.S. Title 49, Chapter 2, Article 3 if the facility is not causing or contributing to the violation of an Aquifer Water Quality Standard at a point of compliance, determined by the criteria in A.R.S. § 49-244.
  3. Aquifer Protection Permit application submittal. A person who did not file a Notice of Disposal and does not possess a Groundwater Quality Protection Permit or an Aquifer Protection Permit for an existing facility, but submitted the information required in applicable rules before December 27, 1989, is in compliance with Articles 1, 2, and 3 of this Chapter only if the person submitted an Aquifer Protection Permit application to the Department before January 1, 2001.
- B. Applicability. Subsection (A) applies until the Director:
1. Issues an Aquifer Protection Permit for the facility,
  2. Denies an Aquifer Protection Permit for the facility, ~~or~~
  3. Issues a letter of clean closure approval for the facility under A.R.S. § 49-252, or
  4. Determines that the person failed to submit an application under R18-9-104.
- ~~C. Transition.~~
1. ~~From individual permit to a general permit.~~
    - a. ~~To qualify for a general permit established in Article 3, an owner or operator of a facility who applied for or was issued an individual permit before January 1, 2001, or who operates a~~

facility described in subsection (A) shall submit the information required by Article 3 and adhere to all applicable general permit conditions.

b. ~~The facility's individual permit is valid and enforceable until the date the Department receives Notification of Intent to Discharge, or until the date the Director issues a written Verification of General Permit Conformance, if required.~~

c. ~~If the Director does not provide the required verification, the facility's individual permit remains valid and enforceable until its stated date of expiration, if any.~~

~~2. Approvals to Construct.~~

a. ~~Any Approval to Construct a sewerage system issued under 18 A.A.C. 9, Article 8 before January 1, 2001 is valid until its stated date of expiration.~~

b. ~~The Department shall accept the Approval to Construct instead of the design report requirements specified in R18-9-B202(A) if the individual permit application is in process on January 1, 2001.~~

c. ~~The Director shall provide a Verification of General Permit Conformance under R18-9-A301(D), for an on-site wastewater treatment facility with a flow of less than 20,000 gallons per day if the facility is constructed according to the specifications in the Approval to Construct.~~

D. ~~Monitoring. The Director may amend an individual permit to incorporate monitoring requirements to ensure that reclaimed water quality standards developed under A.R.S. § 49-221(E) are met.~~

#### **R18-9-106. Determination of Applicability**

A. A person who engages or who intends to engage in an operation or an activity that may result in a discharge regulated under Articles 1, 2, and 3 of this Chapter may submit a request, on a form provided by the Department, that the Department determine the applicability of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter to the operation or activity.

B. A person requesting a determination of applicability shall provide the following information and the applicable fee under 18 A.A.C. 14:

1. The name and location of the operation or activity;

~~2. The location of the operation or activity;~~

~~3-2.~~ The ~~names~~ name of the ~~persons~~ any person who ~~are~~ is engaging or who ~~propose~~ proposes to engage in the operation or activity;

~~4-3.~~ A description of the operation or activity;

~~5-4.~~ A description of the volume, chemical composition, and characteristics of materials stored, handled, used, or disposed of in the operation or activity; and

~~6-5.~~ Any other information required by the Director to make the determination of applicability.

C. Within 45 days after receipt of a request for a determination of applicability, the Director shall notify in writing the person making the request that the operation or activity:

1. Is not subject to the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter because the operation or facility does not discharge as described under A.R.S. § 49-241;

2. Is not subject to the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter because the operation or activity is exempted by A.R.S. § 49-250 or R18-9-103;

3. Is eligible for a general permit under A.R.S. §§ 49-245.01, 49-245.02 or 49-247 or Article 3 of this Chapter, specifying the particular general permit that applies, provided the person meets the conditions of the general permit; or

4. Is subject to the permit requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1, 2, and 3 of this Chapter.

~~D.~~ If the Director determines that an operation or activity is subject to the requirements of A.R.S. §§ 49-241 through 49-252, the person who owns or operates the facility shall, within 90 days from the date of the Director's written notification, submit an application for an Aquifer Protection Permit or a closure plan.

~~D-E.~~ If, after issuing a determination of applicability under this Section, the ~~Department~~ Director concludes that ~~its~~ the determination or the information relied upon for a determination is inaccurate, the ~~Department~~ Director may modify or withdraw ~~its~~ the determination upon written notice to the person who requested the determination of applicability.

#### **R18-9-107. Consolidation of Aquifer Protection Permits**

A. The Director may consolidate any number of individual permits or facilities authorized to discharge under a

general ~~permits~~ permit into a single individual permit, if:

1. The facilities are part of the same project or operation and are located in a contiguous geographic area, or
  2. The facilities are part of an area under the jurisdiction of a single political subdivision.
- B. All applicable individual permit requirements established in Articles 1 and 2 of this Chapter apply to the consolidation of Aquifer Protection Permits.

#### **R18-9-108. Public Notice**

- A. Individual permits.
1. The Department shall provide the entities specified in subsection (A)(2), monthly written or electronic notification of the following:
    - a. Individual permit applications,
    - b. Temporary permit applications,
    - c. Preliminary and final decisions by the Director whether to issue or deny an individual or temporary permit,
    - d. Closure plans received under R18-9-A209(B),
    - e. Significant permit amendments and “other” permit amendments,
    - f. Permit revocations, and
    - g. Clean closure approvals.
  2. Entities.
    - a. Each county department of health, environmental services, or comparable department;
    - b. An affected federal, state, local agency, or council of government; and
    - c. A person who requested, in writing, notification of the activities described in subsection (A).
  3. The Department may post the information referenced in subsections (A)(1) and ~~(A)(2)~~ (2) on the Department web site: [www.adeq.state.az.us](http://www.adeq.state.az.us).
- B. General permits. Public notice requirements do not apply.

#### **R18-9-109. Public Participation**

- A. Notice of Preliminary Decision.
1. The Department shall publish a Notice of Preliminary Decision regarding the issuance or denial of a significant permit amendment or a final permit determination in one or more newspapers of general circulation where the facility is located.
  2. The Department shall accept written comments from the public before a significant permit amendment or a final permit determination is made.
  3. The written public comment period begins on the publication date of the Notice of Preliminary Decision and extends for 30 calendar days.
- B. Public hearing.
1. The Department shall provide notice and conduct a public hearing to address a Notice of Preliminary Decision regarding a significant permit amendment or final permit determination if:
    - a. Significant public interest in a public hearing exists, or
    - b. Significant issues or information have been brought to the attention of the Department that has not been considered previously in the permitting process.
  2. If, after publication of the Notice of Preliminary Decision, the Department determines that a public hearing is necessary, the Department shall schedule a public hearing and publish the Notice of Preliminary Decision at least once, in one or more newspapers of general circulation where the facility is located.
  3. The Department shall accept written public comment until the close of the hearing record as specified by the person presiding at the public hearing.
- C. At the same time the Department notifies a permittee of a significant permit amendment or an applicant of the final permit determination, the Department shall send, through regular mail, a notice of the amendment or determination to any person who submitted comments or attended a public hearing on the significant permit amendment or final permit determination.
- D. The Department shall respond in writing or electronically to all written comments submitted during the ~~written formal~~ public comment period.
- E. General permits. Public participation requirements do not apply.

**ARTICLE 2. AQUIFER PROTECTION PERMITS - INDIVIDUAL PERMITS**  
**PART A. APPLICATION AND GENERAL PROVISIONS**

**R18-9-A201. Individual Permit Application**

- A. Individual permit application.
- ~~1.~~ 1. A person may submit an An individual permit application ~~that~~ covers one or more of the following categories:
    - ~~1.~~ 1. ~~a.~~ Drywell,
    - ~~2.~~ 2. ~~b.~~ Industrial,
    - ~~3.~~ 3. ~~c.~~ Mining,
    - ~~4.~~ 4. ~~d.~~ Wastewater, ~~or~~
    - ~~5.~~ 5. ~~e.~~ Solid waste disposal, or
    - ~~6.~~ 6. Land treatment facility.
- B. ~~2.~~ 2. ~~The An~~ applicant for an individual permit shall provide the Department with:
- ~~1.~~ 1. ~~a.~~ The following information on an application form:
    - ~~a.~~ i. ~~The name and mailing address of the applicant;~~
    - ~~ii.~~ ii. ~~The social security number of the applicant, if the applicant is an individual;~~
    - ~~b.~~ iii. ~~The name and mailing address of the owner of the facility;~~
    - ~~c.~~ iv. ~~The name and mailing address of the operator of the facility;~~
    - ~~d.~~ v. ~~The legal description of the location of the facility, including latitude and longitude;~~
    - ~~e.~~ vi. ~~The expected operational life of the facility;~~ and
    - ~~f.~~ vii. ~~Any other federal or state environmental permit issued to the applicant;~~
  - ~~2.~~ b. A copy of the certificate of disclosure required by A.R.S. § 49-109;
  - ~~3.~~ e. Evidence that the facility complies with applicable municipal or county zoning ordinances, codes, and regulations;
  - ~~4.~~ d. Two copies of the technical information required in R18-9-A202(A);
  - ~~5.~~ e. The financial information required in R18-9-A203; The following cost estimates for facility construction, operation, maintenance, closure, and post closure. The applicant, engineer, controller, or accountant shall derive the cost estimates from competitive bids, construction plan take-off's, or specifications, as applicable. The cost estimates shall represent regional fair market costs:
    - ~~a.~~ a. The cost of closure estimate required in R18-9-A209(B)(1)(h), consistent with the closure plan or strategy submitted under R18-9-A202(A)(10);
    - ~~b.~~ b. The estimated cost of post-closure monitoring and maintenance required in R18-9-A209(E)(1)(e), consistent with the post closure plan or strategy submitted under R18-9-A202(A)(10); and
    - ~~c.~~ c. For a sewage treatment facility and a utility subject to Title 4 of the Arizona Revised Statutes, the operation and maintenance costs of those elements of the facility used to comply with the demonstration under A.R.S. § 49-243(B);
  - ~~6.~~ f. The site-specific conditions specified in R18-9-A202;
  - ~~7.~~ g. For a sewage treatment facility, a design report signed and sealed by an Arizona-registered professional engineer, containing the additional information required in R18-9-B202 and R18-9-B203;
  - ~~8.~~ h. Certification in writing that the information submitted in the application is true and accurate to the best of the applicant's knowledge; and
  - ~~9.~~ i. The applicable fee established in 18 A.A.C. 14.
- C. Special provisions.
- ~~3-1.~~ 1. Special provision for underground storage facilities. A person applying for an individual permit for an underground storage facility shall submit the information described in R18-9-A201 through R18-9-A203, except for the BADCT information specified in R18-9-A202(A)(5).
    - a. Upon receipt of the application, the Department shall process the application in coordination with the underground storage facility permit process administered by the Department of Water Resources.
    - b. The Department shall advise the Department of Water Resources of each permit application received.
  2. Special provision for sewage treatment facilities. Any person applying for a permit for a sewage

treatment facility for a subdivision shall indicate whether a homeowner's association or separate private entity will be involved in the ownership or operation of the facility.

a. If the homeowner's association or separate private entity is involved in the ownership or operation of the facility, the person shall provide information regarding the homeowner's association or separate private entity's technical capability required under R18-9-A202(B) and the financial capability required under R18-9-A203.

b. If the homeowner's association or separate private entity is not currently involved in the ownership or operation of the facility, the person shall comply with the requirements under R18-9-A212(B)(3) at the time of permit transfer.

~~B.D.~~ Pre-application conference. Upon request of the applicant, the Department shall schedule and hold a pre-application conference with the applicant to discuss any requirements in Articles 1 and 2 of this Chapter.

~~C.E.~~ Draft permit. The Department shall provide the applicant with a draft of the individual permit ~~on or immediately~~ before publication of the Notice of Preliminary Decision specified in R18-9-109.

~~D.F.~~ Permit Duration. Except for a temporary permit, an individual permit is valid for the period of time specified in the permit up to the operational life of the facility and any period during which the facility is subject to a post-closure plan under ~~R18-9-A209(C)~~ R18-9-A209(E).

~~E.G.~~ Permit issuance or denial.

1. The Director shall issue an individual permit if ~~the Director determines~~, based upon the information obtained by or made available to the Department, the Director determines that the applicant will comply with A.R.S. §§ 49-241 through 49-252 and Articles 1 and 2 of this Chapter.

2. The Director shall provide the applicant with written notification of the final decision to issue or deny the permit ~~application~~ within the overall licensing time-frame requirements under 18 A.A.C. 1, Chapter 5, Table 10 and the following.

~~3. If the Director denies an individual permit application the Director shall provide the applicant with a written notification that explains:~~

~~a. The reason for the denial with reference to the statute or rule on which the denial is based;~~

~~b.a. The applicant's right to appeal the denial final permit determination, including the number of days the applicant has to file a protest ~~challenging the denial~~ and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and~~

~~b. If denied, the reason for the denial with reference to the statute or rule on which the denial is based; and~~

~~c. The applicant's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.~~

~~4.3. Permit applications~~ The Director shall issue or deny a permit for an application received before August 16, 1999, ~~not subject to licensing time frames, shall be issued or denied~~ within 30 days after close of public comment established in the public notice, or if a public hearing is held, within 45 days after the public hearing record is closed.

a. The Director may extend the final decision deadline for not more than 90 days after the close of the public comment period, or, if a public hearing is held, after the public hearing record is closed, if the Director determines that additional information is required to make the decision whether to issue or deny a permit.

b. The Director shall provide the applicant with written notification of a decision to extend the final decision deadline within 15 days after the close of the public comment period or if a public hearing is held, within 15 days after the public hearing record is closed.

#### **R18-9-A202. Technical Requirements**

A. Except as specified in R18-9-A201(A)(3), an applicant shall submit the following technical information as attachments to the individual permit application:

1. A topographic map, or other appropriate map approved by the Department, of the facility location and contiguous land area showing the known use of adjacent properties, all known water well locations found within 1/2 mile of the facility, and a description of well construction details and well uses, if available;

2. A facility site plan showing all known property lines, structures, water wells, injection wells, drywells and their uses, topography, and the location of points of discharge. The facility site plan shall include all known borings. If unless the Department determines that borings are numerous, ~~and~~ the applicant



- ~~shall satisfy this~~ requirement ~~may be satisfied by~~ with a narrative description of the number and location of the borings;
3. The facility design documents indicating proposed or as-built design details and proposed or as-built configuration of basins, ponds, waste storage areas, drainage diversion features, or other engineered elements of the facility affecting discharge. When formal as-built plan submittals are not available, the applicant shall provide documentation, sufficient to allow evaluation of those elements of the facility affecting discharge, following the demonstration requirements of A.R.S. § 49-243(B). An applicant seeking an Aquifer Protection Permit for a sewage treatment facility ~~shall submit~~ satisfies the requirements of this subsection by submitting the design documents required in R18-9-B202 and R18-9-B203;
  4. A summary of the known past facility discharge activities and the proposed facility discharge activities indicating all of the following:
    - a. The chemical, biological, and physical characteristics of the discharge;
    - b. The rate, volume, and frequency of the discharge for each facility; and
    - c. The location of the discharge and a map outlining the pollutant discharge area;
  5. A description of the BADCT ~~to be~~ employed in the facility, including:
    - a. A statement of the technology, processes, operating methods, or other alternatives ~~that will be employed~~ proposed to meet the requirements of A.R.S. § 49-243(B), (G), or (P), as applicable. The statement shall describe:
      - i. The alternative discharge control measures considered,
      - ii. The technical and economic advantages and disadvantages of each alternative, and
      - iii. The justification for selection or rejection of each alternative;
    - b. An evaluation of each alternative discharge control technology relative to the amount of discharge reduction achievable, site-specific hydrologic and geologic characteristics, other environmental impacts, and water conservation or augmentation;
    - c. For a new facility, an industry-wide evaluation of the economic impact of implementation of each alternative control technology;
    - d. For an existing facility, a statement reflecting the consideration of factors listed in A.R.S. §§ 49-243(B)(1)(a) through ~~(B)(1)(h)~~ (h);
    - e. The above requirements do not apply if the Department verifies that a A sewage treatment facility meets meeting the BADCT requirements under Article 2, Part B of this Chapter satisfies the requirements under subsections (A)(5)(a) through (d).
  6. Proposed points of compliance for the facility based on A.R.S. § 49-244. An applicant shall demonstrate that:
    - a. The facility will not cause or contribute to a violation of ~~the an~~ an Aquifer Water Quality ~~Standards Standard~~ Standard at the proposed point of compliance, or
    - b. If an Aquifer Water Quality Standard for a pollutant ~~has been~~ is exceeded in an aquifer at the time of permit issuance, no additional degradation of the aquifer relative to that pollutant and determined at the proposed point of compliance will occur as a result of the discharge from the proposed facility;
  7. A contingency plan that meets the requirements of R18-9-A204;
  8. A hydrogeologic study that defines the discharge impact area for the expected duration of the facility. The Department may allow the applicant to submit an abbreviated hydrogeologic study or, if warranted, no hydrogeologic study, based upon the quantity and characteristics of the pollutants discharged, the methods of disposal, and the site conditions. ~~Information~~ The applicant may include information from a previous study of the affected area ~~may be included~~ to meet a requirement of the hydrogeologic study, if the previous study accurately represents current hydrogeologic conditions.
    - a. The hydrogeologic study shall demonstrate:
      - ~~a.~~ i. That the facility will not cause or contribute to a violation of an Aquifer Water Quality ~~Standards Standard~~ Standard at the applicable point of compliance; or
      - ~~b.~~ ii. If an Aquifer Water Quality Standard for a pollutant ~~has been~~ is exceeded in an aquifer at the time of permit issuance that no additional degradation of the aquifer relative to that pollutant and determined at the applicable point of compliance will occur as a result of the discharge from the proposed facility. To document that an Aquifer Water Quality Standard is exceeded at the time of permit issuance, the applicant shall submit an Ambient Groundwater Monitoring Report as part of the

individual permit application. AQLs are derived from 8 or more rounds of ambient groundwater samples collected in the monitor well at the point of compliance;

- e.b. Based on the quantity and characteristics of pollutants discharged, methods of disposal, and site conditions, the Department may require the applicant to provide:
- i. A description of the surface and subsurface geology, including a description of all borings;
  - ii. The location of any perennial, intermittent, or ephemeral surface water bodies;
  - iii. The characteristics of the aquifer and geologic units with limited permeability, including depth, hydraulic conductivity, and transmissivity;
  - iv. ~~Rate~~ The rate, volume, and direction of surface water and groundwater flow, including hydrographs, if available, and equipotential maps;
  - v. The precise location or estimate of the location of the 100-year flood plain and an assessment of the 100-year flood surface flow and potential impacts on the facility;
  - vi. Documentation of the existing quality of the water in the aquifers underlying the site, including, where available, the method of analysis, quality assurance, and quality control procedures associated with the documentation;
  - vii. Documentation of the extent and degree of any known soil contamination at the site;
  - viii. An assessment of the potential of the discharge to cause the leaching of pollutants from surface soils or vadose materials or cause the migration of contaminated groundwater;
  - ix. Any anticipated changes in the water quality expected because of the discharge;
  - x. A description of any expected changes in the elevation or flow directions of the groundwater that may be caused by the facility;
  - xi. A map of the facility's discharge impact area;
  - xii. The criteria and methodologies used to determine the discharge impact area; or
  - xiii. The proposed location of each point of compliance;
9. A detailed proposal indicating the alert levels, discharge limitations, monitoring requirements, compliance schedules, and temporary cessation, ~~closure, and post closure strategies or plans~~ that the applicant will use to satisfy the requirements of A.R.S. Title 49, Chapter 2, Article 3, and Articles 1 and 2 of this Chapter;
- ~~10.~~ 10. Closure and post closure strategies or plans; and
- ~~10.11.~~ Any other relevant information required by the Department to determine whether to issue a permit.
- B. An applicant shall demonstrate the ability to maintain the technical capability necessary to carry out the terms of the individual permit, including a demonstration that a certified operator will operate the facility ~~will be operated by a certified operator~~ if a certified operator is required under 18 A.A.C. 5. ~~An~~ The applicant shall make the demonstration by submitting the following information for each person principally responsible for designing, constructing, or operating the facility:
1. Pertinent licenses or certifications held by the person;
  2. Professional training relevant to the design, construction, or operation of the facility; and
  3. Work experience relevant to the design, construction, or operation of the facility.

### **R18-9-A203. Financial Requirements**

- A. ~~Cost estimates. A person applying for an individual permit shall demonstrate financial capability to construct, operate, close, and assure proper post closure care of the facility in compliance with A.R.S. Title 49, Chapter 2, Article 3; Articles 1 and 2 of this Chapter; and the conditions of the individual permit.~~
1. ~~The applicant shall submit the following cost estimates:~~
    - a. ~~Total cost of new facility construction;~~
    - b. ~~The operation and maintenance costs of those elements of the facility used to comply with the demonstration under A.R.S. § 49-243(B);~~
    - c. ~~The cost of closure, described in R18-9-A209(B), consistent with the closure plan or strategy submitted under R18-9-A202(A)(9); and~~
    - d. ~~The cost of post-closure monitoring and maintenance, described in R18-9-A209(C), consistent with the post closure plan or strategy submitted under R18-9-A202(A)(9).~~
  2. ~~The cost estimates for facility construction, operation, and maintenance shall be derived from competitive bids, construction plan take-offs, or specifications, if available. The cost estimates may be prepared by an engineer, contractor, or accountant and shall be representative of regional fair~~

market costs.

- B. ~~Financial demonstration. The applicant's chief financial officer shall submit a statement indicating that the applicant is financially capable of meeting the costs described in subsection (A).~~
1. ~~The statement shall specify in detail the financial arrangements for meeting the estimated closure and post-closure costs, according to the plans or strategies submitted under R18-9-A202(A)(9).~~
  2. ~~An applicant other than a state or federal agency, county, city, town, or other local government entity, shall further support the demonstration of financial capability with at least one of the following:~~
    - a. ~~If a publicly traded corporation, the latest fiscal year end copy of the applicant's 10K or 20F Form filed under section 13 or 15(d) of the federal Securities Exchange Act of 1934;~~
    - b. ~~If a non-publicly traded corporation, a report that contains all of the following:~~
      - i. ~~A brief description of the applicant's status as a corporation;~~
      - ii. ~~A brief description of the applicant's business;~~
      - iii. ~~Signed and dated copies of the applicant's U.S. tax returns with all schedules from the two previous tax years and a copy of the most recent year-end financial statement.~~
      - iv. ~~A brief description of any civil judgement exceeding \$100,000 against the applicant during the last five years preceding the date of the application;~~
      - v. ~~A brief description of any bankruptcy proceeding instituted by the applicant during the five years preceding the date of the application; and~~
      - vi. ~~The names of the corporation's executive officers and their dates of birth or ages.~~
    - c. ~~If the applicant is a partnership or limited liability entity, the name of any principal who owns more than a 20% interest in the business entity;~~
    - d. ~~If the person is an individual, non-business applicant, a current financial statement and evidence of current personal income or assets.~~
- C. ~~The Department shall consider an applicant unable to demonstrate the financial capability necessary to fully carry out the terms of the permit, as described in subsection (B), and shall require the applicant to submit a financial assurance mechanism under subsection (D) if any one of the following conditions exists:~~
1. ~~For a publicly traded corporation:~~
    - a. ~~The 10K Form or 20F Form indicates that the company received an adverse opinion, disclaimer of opinion, or other qualified opinion from the independent certified public accountant auditing its financial statements;~~
    - b. ~~Standard and Poor's or Moody's Investors Service has assigned the applicant an unsecured debt rating less than investment grade. Unacceptable ratings are Standard and Poor's: BB, B, CCC, C, D or Speculative; Moody's Investors Services: Ba, B, Caa, Ca C, or Speculative or lack of an unsecured credit rating by Standard and Poor's or Moody's Investors Service; or~~
    - c. ~~Lack of assets in the United States equal to at least 90% of the total closure and post-closure care cost estimates.~~
  2. ~~For a non-publicly traded corporation:~~
    - a. ~~Lack of a financial statement prepared by an independent certified public accountant, including all balance sheet notes and schedules;~~
    - b. ~~Lack of assets located in the United States equal to at least 90% of total assets or assets amounting to less than six times the costs of closure and post-closure care; or~~
    - c. ~~Lack of net working capital and tangible net worth of at least six times the costs of closure and post-closure care.~~
- D. ~~Financial demonstration option.~~
1. ~~Instead of the financial demonstration required in subsection (B), an applicant may submit evidence of one or more of the following financial assurance mechanisms, listed in A.R.S. § 49-761(J), sufficient to cover the costs described in subsection (A). The applicant shall provide written documentation demonstrating compliance with the listed requirements for each financial assurance mechanism.~~
    - a. ~~Performance surety bond.~~
      - i. ~~The surety is listed in Department of Treasury, Circular 570, as qualified in the State where the bond is signed; and~~
      - ii. ~~The surety's underwriting limit is at least as great as the amount of the surety bond.~~
    - b. ~~Certificate of deposit.~~
      - i. ~~The Certificate of deposit is issued by a financial institution that is insured by the Federal Deposit Insurance Corporation or Federal Savings and Loan Insurance~~

- corporation, and
- ii. ~~The Certificate of deposit is assigned to the Director.~~
  - c. ~~Trust fund with pay in period.~~
    - i. ~~The trustee is an entity who has the authority to act as a trustee, and~~
    - ii. ~~The trust operation is regulated and examined by a federal or state agency.~~
  - d. ~~Irrevocable letter of credit.~~
    - i. ~~The issuing financial institution has authority to issue letters of credit, and~~
    - ii. ~~The issuing financial institution is regulated and examined by a federal or state agency.~~
  - e. ~~Insurance policy.~~
    - i. ~~The insurer is licensed to transact the business of insurance or as an excess or surplus lines insurer in one or more states, and~~
    - ii. ~~The insurer is a non-captive insurer.~~
  - f. ~~Deposit with the state treasurer.~~
  - g. ~~Guarantee.~~
    - i. ~~A guarantor is the direct or higher tier parent corporation of the owner or operator, a firm whose parent corporation is also the parent corporation of the owner or operator, or a firm with a substantial business relationship with the owner or operator; and~~
    - ii. ~~A guarantor meets the requirements of subsection (D) and complies with the terms of the guarantee.~~
  - h. ~~One or more financial assurance mechanisms; or~~
  - i. ~~An additional financial assurance mechanism approved by the Director.~~
- 2. ~~A permittee may substitute one financial assurance mechanism for another with prior Director approval.~~
  - 3. ~~A permittee shall hold the financial assurance mechanism for the duration of the permit or until the permittee is able to demonstrate the financial capability under subsection (B) necessary to carry out the terms of the Aquifer Protection Permit.~~
- E. ~~If, after issuing an individual permit, the Director determines that a permittee is not able to maintain the financial capability required in subsection (B), the permittee shall provide evidence of a financial assurance mechanism within 90 days from the date on the Department's notification.~~
  - F. ~~If the Director has reason to believe that a permittee will lose financial capability, the Director may request demonstration of financial capability no more than quarterly throughout the duration of an individual permit. The permittee shall provide the information within 90 days from the date on the request.~~
  - G. ~~If a person demonstrates that a financial capability requirement under this Article is duplicative of a financial capability demonstration already made to the state and the Department has access to that information, the person is not required to resubmit that information.~~
- A. Definitions.
- 1. "Face amount" means the total amount the insurer is obligated to pay under the policy.
  - 2. "Net working capital" means current assets minus current liabilities, including civil judgments.
  - 3. "Tangible net worth" means an owner or operator's equity interest in real property or other tangible assets owned by the owner or operator that can be used for collateral or payment of debt, not including goodwill, patent rights, royalties, or capitalized costs.
- B. Financial demonstration. Any person applying for an individual permit shall demonstrate financial capability to construct, operate, close, and assure proper post-closure care of the facility in compliance with A.R.S. Title 49, Chapter 2, Article 3; Articles 1 and 2 of this Chapter; and the conditions of the individual permit. The applicant shall:
- 1. Submit a letter signed by the chief financial officer stating that the applicant is financially capable of meeting the costs described in R18-9-A201(A)(2)(e); and
  - 2. Submit a statement specifying, in detail, the financial arrangements for meeting the estimated closure and post-closure costs, submitted under R18-9-A201(A)(2)(e) that were developed according to the plans or strategies submitted under R18-9-A202(A)(10);
  - 3. For a wastewater treatment plant or utility, submit the mechanism for covering operation and maintenance costs under R18-9-A201(A)(2)(e)(iii);
  - 4. Other than a state or federal agency, county, city, town, or other local government entity, submit at least one of the financial assurance mechanisms listed in subsection (C) that covers the closure and post-closure costs, submitted under R18-9-A201(A)(2)(e) described in the plans or strategies

submitted under R18-9-A202(A)(10).

C. Financial assurance mechanisms. The permittee shall provide:

1. Independent certified public accountant statement. A statement attesting that the accountant has evaluated the company's financial records and that:
  - a. The company has been in business at least five years without a bankruptcy during that period;
  - b. The applicant has a net working capital and tangible net worth in the U.S. at least six times the total amount of the cost estimate required in R18-9-A201(A)(2)(e); and
  - c. The applicant is financially capable of meeting the costs described in R18-9-A201(A)(2)(e).
2. Performance surety bond.
  - a. The company providing performance bonds is an admitted carrier licensed to do business in Arizona.
  - b. The bond provides for performance of all the items listed in R18-9-A201(A)(2)(e) by the surety, or by payment into the Standby Trust Fund of an amount equal to the penal amount if the permittee fails to perform the required activities.
  - c. The penal amount of the bond is at least equal to the amount of the cost estimate developed in R18-9-A201(A)(2)(e) if the bond is the only method used to satisfy the requirements of this Section.
  - d. The surety bond names the Arizona Department of Environmental Quality as beneficiary.
  - e. The original performance bond is submitted to the Director.
  - f. Under the terms of the bond, the surety is liable on the bond obligation when the permittee fails to perform as guaranteed by the bond.
  - g. Payments made under the terms of the bond will be deposited by the surety directly into the Standby Trust Fund.
3. Certificate of deposit.
  - a. One or more certificates of deposit owned by the applicant and made payable to or assigned to the Department is submitted to the Director to cover in whole or in part the applicant's financial assurance obligation.
  - b. The certificate of deposit provides for performance of the items listed in R18-9-A202(A)(2)(e).
  - c. The certificate of deposit is insured by the Federal Deposit Insurance Corporation and is automatically renewable.
  - d. The bank that issues the certificate of deposit in either definitive or book-entry form waives its right of set-off and lien against the certificate of deposit. The permittee and bank executes an Assignment of Deposit worded as in a form provided by the Department.
  - e. The bank names the Arizona Department of Environmental Quality as beneficiary for the certificate of deposit.
  - f. Only the Department has access to the certificate of deposit.
  - g. Interest accrues to the permittee during the period the certificate is given as financial assurance, unless required to satisfy the requirements in R18-9-A201(A)(2)(e).
4. Trust fund.
  - a. The trustee is a trust company or bank authorized to do business in Arizona.
  - b. The trustee is regulated and examined by a federal or state agency.
  - c. The trust fund names the Arizona Department of Environmental Quality as beneficiary.
  - d. The trust is initially funded in an amount at least equal to the cost estimate in the approved closure plan submitted under R18-9-A201(A)(2)(e).
5. Letter of Credit.
  - a. The letter of credit is issued by a financial institution that is authorized to transact business in Arizona.
  - b. The financial institution is regulated and examined by a federal or Arizona agency.
  - c. The institution issuing the letter of credit is an institution with assets of at least one billion dollars. If the issuing institution has less than this amount in assets, the letter of credit is fully collateralized by the permittee to be acceptable under this Section. The Director may require an independent rating of the proposed bank, the cost of any such rating will be paid by the permittee. The Director may choose not to accept the letter of credit from a bank that the Director has cause to believe will not promptly comply with its terms and conditions in the case of a request for funds from the Department.

- d. The Letter of Credit is irrevocable and issued for a period of at least one year in an amount equal to the current cost estimate. The letter of credit provides that the expiration date is automatically extended for a period of at least one year unless the issuing institution has canceled the letter of credit by sending notice of cancellation by certified mail to the permittee and to the Director 120 days in advance of cancellation or expiration. The permittee shall provide alternate financial assurance within 60 days of receipt of notice of expiration or cancellation.
  - e. The financial institution names the Arizona Department of Environmental Quality as beneficiary for the letter of credit.
  - f. The letter is prepared on the bank's letterhead and identifies the letter of credit by number, issue date, expiration date, dollar sum of the credit, the name and address of the Department as the beneficiary, and the name and address of the applicant as the permittee.
6. Insurance policy.
- a. The insurance is effective before signature of the permit or substitution of insurance for other extant financial assurance instruments posted with the Director.
  - b. The insurer is authorized to transact the business of insurance in Arizona. The insurer has an asset size of one hundred million dollars or greater, or is an admitted carrier, a licensed carrier, or a registered carrier of surplus lines of insurance or reinsurance having either a surplus or not less than twenty-five million dollars above undiscounted actuarial reserves including incurred but not reported (IBNR) claims, or has an AM BEST Rating of at least a B+ or the equivalent rating of other recognized rating companies. The permittee shall submit a copy of the insurance policy to the Department.
  - c. The insurance policy guarantees that funds will be available to pay costs as submitted under R18-9-A201(A)(2)(e). The policy also guarantees that once cleanup steps begin that the insurer is responsible for paying out funds to the Director or other entity designated by the Director up to an amount equal to the face amount of the policy.
  - d. The insurance policy is issued for a face amount at least equal to the current cost estimate submitted to the Director for performance of all items listed in R18-9-A201(A)(2)(e), or a pro-rata amount if used in conjunction with other financial assurance mechanisms. Actual payments by the insurer will not change the face amount, although the insurer's future liability may be reduced by the amount of the payments, during the policy period.
  - e. The insurance policy names the Arizona Department of Environmental Quality as additional insured.
  - f. Each policy contains a provision allowing assignment of the policy to a successor permittee. The transfer of the policy is conditional upon consent of the insurer and the Department.
  - g. The insurance policy provides that the insurer does not cancel, terminate, or fail to renew the policy except for failure to pay the premium. The automatic renewal of the policy, at minimum, provides the insured with the option of renewal at the face amount of the expiring policy. If there is a failure to pay the premium, the insurer may cancel the policy by sending notice of cancellation by certified mail to the permittee and to the Director, 120 days in advance of cancellation. If the insurer cancels the policy, the permittee shall provide alternate financial assurance within 60 days of receipt of the notice of cancellation.
  - h. For insurance policies providing coverage commencing on the date that liability to make payments pursuant to the policy accrues, the insurer will annually increase the face amount of the policy. This increase is equivalent to the face amount of the policy, less any payments made, multiplied by an amount equivalent to 85 percent of the most recent investment rate or of the equivalent coupon-issue yield announced by the U.S. Treasury for 26-week treasury securities.
  - i. The permittee reports any change in either surplus or rating to the Director.
  - j. The insurer forwards a copy of the latest annual rating, if applicable, and a copy of the latest audited financial statements to the permittee and the Director.
7. Cash deposit.
- a. Cash from the permittee is deposited in the name of the Department to cover its financial assurance obligation. The cash provides for performance of the items listed in R18-9-A201(A)(2)(e), based on the strategy submitted by the Department under R18-9-A202(A)(10).

- b. The permittee executes an Escrow Agreement worded as in the forms provided by the Department.
  - c. The account names the Arizona Department of Environmental Quality as beneficiary.
  - d. Only the Department has access to the funds in the interest bearing account.
  - e. Interest accrues to the permittee, unless required to satisfy the requirements in R18-9-A202(A)(10).
8. Third-party guarantees.
- a. An affidavit certifying that the guarantee arrangement is valid under all applicable federal and Arizona laws is provided to the Department with a certified copy of the corporate resolution authorizing the corporation to enter into an agreement to guarantee the permittee's financial assurance obligation.
  - b. Documentation to explain the third-party relationship.
  - c. The applicant demonstrates that the third-party has one of the financial mechanisms listed in subsections (C)(1) through (7).
  - d. The guarantee is governed by and constructed according to Arizona law.
  - e. The guarantee continues in full force until released by the Director.
  - f. If the permittee fails to perform closure, post-closure care, or corrective action of a facility covered by the guarantee, or both, the guarantor may perform, or pay a third party to perform closure, post-closure care, or corrective action, or both, as required by the Director, or establish a fully funded trust fund as specified under subsection (C)(4) in the name of the owner or operator.
  - g. The guarantor names the Arizona Department of Environmental Quality as beneficiary for the third-party guarantee.
- D. Supplemental information. The Director may require an applicant or guarantor to submit supplemental financial reports if the Department determines that the information submitted under subsection (B) or (C) does not satisfy financial capability.
- E. Third-party guarantee reporting. The Director may require a report of financial condition at any time from the guarantor.
- 1. If there are significant or material increases in the financial responsibility amounts required by the federal, state, or local agencies during the fiscal year, the guarantor shall inform the Department within 30 calendar days.
  - 2. If the guarantor receives an adverse auditor's notice, opinion, or qualification, the guarantor shall notify the Department within 30 calendar days.
- F. Loss of coverage.
- 1. If the Director believes that a permittee will lose financial capability, the Director shall request evidence of the financial assurance mechanism. The permittee shall provide the information within 30 days from the date of the request.
  - 2. If the Director finds that a permittee or guarantor will lose financial capability, based on either the information obtained under subsection (C)(3)(a) or any other direct notification, the Director shall notify the permittee in writing of its finding. The permittee shall submit another financial assurance using any of the mechanisms described in subsection (C)(1) through (7) within 60 calendar days of the notice.
- G. Financial assurance substitution. A permittee may substitute one financial assurance mechanism for another if the substitution is approved by the Director.
- H. Permit amendment. The permittee shall apply for an amendment to the individual permit for the conditions listed in subsections (E), (F), or (G) or if the closure strategy is revised by the permittee resulting in changes to the cost in R18-9-A201(A)(2)(e) since approval by the Department.
- I. Previous financial demonstration. If a person shows that the financial assurance demonstration required under this Section is duplicative of a financial demonstration already made to a governmental agency and the Department has access to that information, the person is not required to resubmit that information.
- J. Recordkeeping. A permittee shall maintain the financial capability for the duration of the permit and report as specified in the permit.

**R18-9-A204. Contingency Plan**

- A. An individual permit shall specify a contingency plan that defines the actions to be taken if a discharge results in any of the following:

1. A violation of a permit condition,
  2. A violation of an Aquifer Water Quality Standard,
  3. An alert level is exceeded,
  4. A discharge limitation is exceeded, or
  5. An imminent and substantial endangerment to the public health or the environment.
- B. The contingency plan may include one or more of the following actions if a discharge results in any of the conditions described in subsection (A):
1. Verification sampling;
  2. Notification to downstream or downgradient users who may be directly affected by the discharge;
  3. Further monitoring that may include increased frequency, additional constituents, or additional monitoring locations;
  4. Evaluation of BADCT effectiveness that may include proposed technology upgrades;
  - 4.5. Inspection, testing, or maintenance of discharge control features of at the facility;
  - 5.6. For Pretreatment evaluation for sewage treatment facilities, pretreatment evaluation;
  - 6.7. Preparation of a hydrogeologic study to assess the extent of soil, surface water, or aquifer impact;
  - 7.8. Corrective action that may include includes any of the following measures:
    - a. Control of the source of an unauthorized discharge,
    - b. Soil cleanup,
    - c. Cleanup of affected surface waters,
    - d. Cleanup of affected parts of the aquifer, or
    - e. Mitigation measures to limit the impact of pollutants on existing uses of the aquifer.
- C. Each corrective action proposed under subsection ~~(B)(7)~~ ~~(B)(8)~~ is subject to approval by the Department.
1. Emergency response provisions and corrective actions specifically identified in the contingency plan submitted with a permit application are subject to approval by the Department during the application review process.
  2. Corrective The permittee may propose to the Department corrective actions other than those already identified in the contingency plan ~~may be proposed to the Department by the permittee~~ if a discharge results in any of the conditions identified in subsection (A).
  3. The Department shall approve ~~a~~ the proposed corrective action if the corrective action provides a reasonable plan and time-frame to returns return the facility to compliance with the facility's permit conditions, A.R.S. Title 49, Chapter 2, and Articles 1 and 2 of this Chapter.
  4. Approved The Director may incorporate, corrective actions into an Aquifer Protection Permit ~~other than those already identified in the contingency plan may be incorporated by the Director into an Aquifer Protection Permit.~~
- D. A contingency plan shall contain emergency response provisions to address an imminent and substantial endangerment to public health or the environment including:
1. Twenty-four hour emergency response measures;
  2. The name of an emergency response coordinator responsible for implementing the contingency plan;
  3. Immediate notification ~~of to~~ the Department regarding any emergency response measure taken;
  4. A list of people to contact, including names, addresses, and telephone numbers ~~of persons to be contacted~~ if an imminent and substantial endangerment to public health or the environment arises; and
  5. A general description of the procedures, personnel, and equipment ~~that will be used~~ proposed to mitigate unauthorized discharges.
- E. A permittee may amend a contingency plan required by the Federal Water Pollution Control Act (P.L. 92-500; 86 Stat. 816; 33 U.S.C. 1251, et seq., as amended), or the Resource Conservation and Recovery Act of 1976 (P.L. 94-580; 90 Stat. 2796; 42 U.S.C. 6901 et seq., as amended), ~~may be amended~~ to meet the requirements of this Section and ~~submitted~~ submit it to the Department for approval instead of a separate aquifer protection contingency plan.
- F. A permittee shall maintain at least one copy of the contingency plan required by the individual permit at the location where day-to-day decisions regarding the operation of the facility are made. A permittee shall advise all employees responsible for the operation of the facility of the location of the contingency plan.
- G. A permittee shall promptly revise the contingency plan upon any change to the information contained in the plan.



### **R18-9-A205. Alert Levels and Discharge Limitations**

- A. Alert levels.
1. ~~The Department shall establish alert levels in an individual permit. The alert levels~~ If the Department prescribes an alert level in an individual permit, the Department shall be based base the alert level on the site-specific conditions described by the applicant in the application submitted under R18-9-A201(A)(2) or other information available to the Department
  2. The Department may specify an alert level based on a pollutant that indicates the potential appearance of another pollutant.
  3. The Department may specify the measurement of an alert level at a location appropriate for the discharge activity, considering the physical, chemical, and biological characteristics of the discharge, the particular treatment process, and the site-specific conditions.
- B. Discharge Limitations. ~~The Department shall prescribe discharge limitations based~~ If the Department prescribes discharge limitations, the Department shall base the discharge limitations on the considerations described in A.R.S. § 49-243.

### **R18-9-A206. Monitoring Requirements**

- A. Monitoring.
1. The Department shall determine whether monitoring is required to assure compliance with Aquifer Protection Permit conditions and with the applicable Aquifer Water Quality Standards established under A.R.S. §§ 49-221, 49-223, 49-241 through 49-244, and 49-250 through 49-252.
  2. If monitoring is required, the Director shall specify to the permittee:
    - a. The type and method of monitoring ~~to be conducted~~;
    - b. The frequency of monitoring;
    - c. Any requirements for the installation, use, or maintenance of monitoring equipment; and
    - d. The intervals at which the permittee ~~shall report~~ reports the monitoring results to the Department.
- B. Recordkeeping.
1. A permittee shall make a monitoring record for each sample taken, as required by the individual permit, consisting of all of the following:
    - a. The date, time, and exact place of a sampling and the name of each individual who performed the sampling;
    - b. The procedures used to collect the sample;
    - c. The date sample analysis was completed;
    - d. The name of each individual or laboratory performing the analysis;
    - e. The analytical techniques or methods used to perform the sampling and analysis;
    - f. The chain of custody records; and
    - g. Any field notes relating to the information described in subsections (B)(1)(a) through ~~(B)(1)(f)~~ (f).
  2. A permittee shall make a monitoring record for each measurement made, as required by the individual permit, consisting of all of the following:
    - a. The date, time, and exact place of the measurement and the name of each individual who performed the measurement;
    - b. The procedures used to make the measurement; and
    - c. Any field notes relating to the information described in subsections (B)(2)(a) and ~~(B)(2)(b)~~ (b).
  3. A permittee shall maintain monitoring records for at least 10 years after the date of the sample or measurement unless the Department specifies a different time period in the permit.

### **R18-9-A207. Reporting Requirements**

- A. A permittee shall notify the Department within five days after becoming aware of a violation of a permit condition or that an alert level ~~has been was~~ exceeded. The permittee shall inform the Department whether the contingency plan described in R18-9-A204 ~~has been was~~ implemented.
- B. In addition to the requirements in subsection (A), a permittee shall submit a written report to the Department within 30 days after the permittee becomes aware of ~~the a~~ violation of a permit condition. The report shall contain:
1. A description of the violation and its cause;

2. The period of violation, including exact date and time, if known, and the anticipated time period the violation is expected to continue;
  3. Any action taken or planned to mitigate the effects of the violation or to eliminate or prevent recurrence of the violation;
  4. Any monitoring activity or other information that indicates that a pollutant is expected to cause a violation of an Aquifer Water Quality Standard; and
  5. Any malfunction or failure of a pollution control device or other equipment or process.
- C. A permittee shall notify the Department within five days after the occurrence of any of the following:
1. The permittee's filing of bankruptcy, or
  2. The entry of any order or judgment not issued by the Director against the permittee for the enforcement of any federal or state environmental protection statute or rule.
- D. The Director shall specify the format for submitting results from monitoring conducted under R18-9-A206.

**R18-9-A208. Compliance Schedule**

- A. A permittee shall follow the compliance schedule established in the individual permit.
1. If a compliance schedule provides that ~~actions are to be taken during~~ an action is required after a period that exceeds one year from the date of permit issuance, the schedule shall establish interim requirements and dates for their achievement.
  2. If the time necessary for completion of an interim requirement is more than one year and is not readily divisible into stages for completion, the permit shall contain interim dates for submission of reports on progress toward completion of the interim requirements and shall indicate a projected completion date.
  3. ~~Within~~ Unless otherwise specified in the permit, within 30 days after the applicable date specified in a compliance schedule, a permittee shall submit to the Department a report ~~indicating whether documenting that~~ the required action was taken within the time specified.
  4. After reviewing the compliance schedule activity the Director may amend the Aquifer Protection Permit, based on changed circumstances relating to the required action.
- B. The Department shall consider all of the following factors when setting the compliance schedule requirements:
1. The character and impact of the discharge,
  2. The nature of construction or activity required by the permit,
  3. The number of persons affected or potentially affected by the discharge,
  4. The current state of treatment technology, and
  5. The age of the facility.
- C. For a new facility, the Department shall not defer to a compliance schedule any requirement necessary to satisfy the criteria under A.R.S. § 49-243(B).

**R18-9-A209. Temporary Cessation, Closure Plan, Clean Closure, Closure of a Permitted Facility, and Post-closure**

- A. Temporary cessation.
1. A permittee shall notify the Department before a cessation of operations at the facility of at least 60 days duration.
  2. The permittee shall implement any ~~measures~~ measure specified in the individual permit for the temporary cessation.
  3. If the permit does not specify temporary cessation measures, ~~the Department shall require the permittee to shall submit specifications for each measure~~ the proposed measures for Department approval by the Department prior to implementation.
- B. Closure plan. A closure plan submitted to the Director shall include:
1. ~~A permittee shall notify the Department of the permittee's intent to cease operations without resuming an activity for which the facility was designed or operated.~~
    - a. ~~The permittee shall submit a closure plan for Director approval within 90 days following the notification of intent to cease operations with the applicable fee established in 18 A.A.C. 14. The closure plan shall describe:~~
      1. A scope of work that specifies:
        - a. The lateral and vertical extent of contamination in soils and groundwater and the analytical results to support the determination.;

- ~~b.~~ ~~i.~~ The approximate quantity and chemical, biological, and physical characteristics of each material ~~to be removed from the facility~~ scheduled for removal;
  - ~~c.~~ ~~ii.~~ The destination of the materials ~~to be removed from the facility~~ and documentation that the destination is approved to accept the materials;
  - ~~d.~~ ~~iii.~~ The approximate quantity and chemical, biological, and physical characteristics of each material that remains at the facility;
  - ~~e.~~ ~~iv.~~ The method ~~to be used~~ proposed to treat any material remaining at the facility;
  - ~~f.~~ ~~v.~~ The method ~~to be used~~ proposed to control the discharge of pollutants from the facility;
  - ~~g.~~ ~~vi.~~ Any limitations on future land or water uses created as a result of the facility's operations or closure activities;
  - ~~h.~~ ~~vii.~~ The methods ~~to be used~~ proposed to secure the facility;
  - ~~i.~~ ~~viii.~~ An estimate of the cost of closure;
  - ~~j.~~ ~~ix.~~ A schedule for implementation of the closure plan and the submission of a post-closure plan; and
  - ~~k.~~ ~~x.~~ Any other relevant information the Department determines ~~to be necessary, including proposed sampling, monitoring, or other site investigation activities;~~ ;
- ~~b.~~ Upon receipt of a complete closure plan, the Director shall:
- ~~i.~~ Provide written notification of the closure as specified in R18-9-108, and
  - ~~ii.~~ If the proposed closure plan does not achieve clean closure, publish a Notice of Preliminary Decision for a permit amendment or issuance of an individual permit as specified in R18-9-109.
- ~~2.~~ Within 60 days of receipt of a complete closure plan, the Department shall determine whether the closure plan achieves clean closure.
- ~~a.~~ If the closure plan achieves clean closure, the Director shall send a letter of approval to the permittee;
  - ~~b.~~ If the closure plan does not achieve clean closure, the permittee shall submit a post closure plan under subsection (C) and the following documents within 90 days from the date on the Department's notice or as specified under A.R.S. § 49-252(E):
    - ~~i.~~ An application for an individual permit, or
    - ~~ii.~~ A request to modify a current individual permit to address closure activities and post closure monitoring and maintenance at the facility.
- ~~3.~~ The Director shall require implementation of the closure plan as a permit condition.
- ~~2.~~ Site investigations performed during closure activities to demonstrate that clean closure has been achieved, including confirmation and verification sampling; and
- ~~3.~~ A summary report of the results of the work performed under subsections (B)(1) and (2).
- ~~C.~~ Clean closure of a facility not covered by an Aquifer Protection Permit.
- ~~1.~~ Any person who requests clean closure approval under A.R.S. § 49-252 shall prepare the closure plan required under subsection (B) and submit it to the Director for approval with the applicable fee established in 18 A.A.C. 14.
  - ~~2.~~ The Director shall issue a clean closure letter of approval if the closure plan summary report in R18-9-A209(B)(3) demonstrates that the closure plan meets the definition of clean closure under A.R.S. § 49-201(5).
  - ~~3.~~ If the Director determines that the closure plan does not achieve clean closure or that clean closure will not be achieved within 180 days of the request, the person shall apply for an individual permit within 90 days of the Director's determination.
- ~~D.~~ Closure of a permitted facility.
- ~~1.~~ A permittee shall notify the Department of the permittee's intent to cease operations without resuming an activity for which the facility was designed or operated.
    - ~~a.~~ The permittee shall submit the closure plan required under subsection (B) for Director approval within 90 days following the Notice of Intent to Cease Operations with the applicable fee established in 18 A.A.C. 14.
    - ~~b.~~ Upon receipt of a complete closure plan, the Director shall provide written notification of the closure as specified in R18-9-108.
  - ~~2.~~ Within 60 days of receipt of a complete closure plan, the Department shall determine whether the closure plan achieves clean closure.

- a. If the closure plan achieves clean closure as defined in A.R.S. § 49-201(5), the Director shall send the permittee a clean closure letter of approval and a Permit Release Notice issued under subsection (F)(2).
- b. If the closure plan does not achieve clean closure, the permittee shall submit:
  - i. A post closure plan under subsection (E) within 90 days from the date on the Director's notice or as specified under A.R.S. § 49-252(E), and
  - ii. A request to amend the current individual permit to address closure activities and post-closure monitoring and maintenance at the facility with the applicable fee established in 18 A.A.C 14.

~~C.E.~~ Post-closure. A permittee shall describe post-closure monitoring and maintenance activities in ~~a plan~~ an application for amendment to an individual permit and submit it to the Department for approval.

- 1. The plan application shall include:
  - a. The duration of post-closure care;
  - b. The monitoring procedures ~~to be implemented~~ proposed by the permittee, including monitoring frequency, type, and location;
  - c. A description of the operating and maintenance procedures ~~to be implemented~~ proposed for maintaining aquifer quality protection devices, such as liners, treatment systems, pump-back systems, and monitoring wells;
  - d. A schedule and description of physical inspections ~~to be conducted~~ proposed at the facility following closure;
  - e. An estimate of the cost of post-closure maintenance and monitoring; ~~and~~
  - f. A description of limitations on future land or water uses, or both, at the facility site as a result of facility operations; ~~and~~
  - g. The applicable fee established in 18 A.A.C. 14.
- 2. The Director shall include the post-closure plan submitted under subsection ~~(C)(4)~~ (E)(1) in the amendment to the individual permit.

~~D.F.~~ The permittee shall provide the Department with written notice that a closure plan or a post-closure plan ~~has been~~ was fully implemented within 30 calendar days of completion.

- 1. Upon receipt of the notice, the Director may inspect the facility to ensure that the closure plan has been fully implemented.
- 2. The Director shall issue a Permit Release Notice if the permittee has satisfied all closure and post-closure requirements.

#### **R18-9-A210. Temporary Individual Permit**

- A. A person may apply for a temporary individual permit for either of the following:
  - 1. A pilot project ~~necessary~~ to develop data for an Aquifer Protection Permit application for the full-scale project, or
  - 2. A ~~temporary~~ facility with a discharge lasting no more than six months.
- B. The applicant shall submit a preliminary application containing the information required in R18-9-A201(A)(2)(a).
- C. The Department shall, based on the preliminary application and in consultation with the applicant, determine and provide the applicant notice of what additional information in R18-9-A201(A)(2) is necessary to complete the application.
- D. Public participation.
  - 1. If the Director issues a temporary individual permit, the Director shall postpone the public participation requirements under R18-9-109.
  - 2. The Director shall not postpone notification of the opportunity for public participation for more than 30 days from the date on the temporary individual permit.
  - 3. The Director may ~~modify~~ amend or revoke the temporary individual permit after consideration of public comments.
  - 4. The Director will not issue a public notice or hold a public hearing if a temporary individual permit is renewed without change.
  - 5. The Director shall renounce a temporary individual permit when making a significant amendment to the permit.
- ~~C.E.~~ A temporary individual permit expires after one year unless it is renewed. ~~A permittee~~ The Director may renew a temporary individual permit no more than one time.

**R18-9-A211. Permit Amendments**

- A. The Director may amend an individual permit based upon a request or upon the Director’s initiative.
  - 1. A permittee shall submit a request for permit amendment in writing on a form provided by the Department with the applicable fee established in 18 A.A.C. 14, explaining the facts and reasons justifying the request.
  - 2. The Department shall process amendment requests following the licensing time-frames established under 18 A.A.C. 1, Article 5, Table 10.
- B. Significant permit amendment. The Director shall make a significant amendment to an individual permit if:
  - 1. Part or all of an existing facility becomes a new facility under A.R.S. § 49-201;
  - 2. A physical change in a permitted facility or a change in its method of operation results in:
    - a. An increase of 10% percent or more in the permitted volume of pollutants discharged, except a sewage treatment facility;
    - b. An increase in design flow of a sewage treatment facility as follows:

Permitted Design Flow	<del>%</del> Increase in Design Flow
500,000 gallons per day or less	10%
Greater than 500,000 gallons per day but less than or equal to five million gallons per day	6%
Greater than five million gallons per day but less than or equal to 50 million gallons per day	4%
Greater than 50 million gallons per day	2%

- c. Discharge of an additional pollutant not allowed by a facility’s original individual permit. The Director may consider the addition of a pollutant with a chemical composition substantially similar to a pollutant the permit currently allows by making an “other” amendment to the individual permit as prescribed in subsection (D);
    - d. For any pollutant not addressed in a facility’s individual permit, any increase that brings the level of the pollutant to within 80% percent or more of a numeric Aquifer Water Quality Standard at the point of compliance; or
    - e. An increase in the concentration in the discharge of a pollutant listed under A.R.S. § 49-243(I);
  - 3. Based upon available information, the facility can no longer demonstrate that its discharge will comply with A.R.S. § 49-243(B)(2) or (3);
  - 4. The permittee requests and the Department ~~makes a~~ agrees to less stringent monitoring ~~change~~, not specified in the individual permit, that ~~will reduce~~ reduces the frequency in monitoring or reporting or ~~that will reduce~~ reduces the number of pollutants monitored, and the permittee demonstrates that the changes ~~do~~ will not affect ~~its~~ the permittee’s ability to remain in compliance with Articles 1 and 2 of this Chapter;
  - 5. It is necessary to change the designation of a point of compliance;
  - 6. The permittee requests and the Department ~~makes~~ agrees to less stringent discharge limitations not specified in the individual permit when the permittee ~~and~~ demonstrates that the changes will not affect the permittee’s ability to remain in compliance with Articles 1 and 2 of this Chapter;
  - 7. It is necessary to make an addition to or a substantial change in closure requirements or to provide for post-closure maintenance and monitoring; or
  - 8. Material and substantial alterations or additions to a permitted facility justify a change in permit conditions.
- C. Minor permit amendment. The Director shall make a minor amendment to an individual permit to:
  - 1. Correct a typographical error;

2. Change nontechnical administrative information, excluding a permit transfer;
  3. Correct minor technical errors, such as errors in calculation, locational information, citations of law, and citations of construction specifications;
  4. Increase the frequency of monitoring or reporting, or to revise a laboratory method;
  5. Make a discharge limitation more stringent; or
  6. Insert calculated alert levels or other permit limits into a permit based on monitoring subsequent to permit issuance, if a requirement to establish the levels or limits and the method for calculation of the levels or limits was established in the original permit.
- D. "Other" permit amendment.
1. The Director may make an "other" amendment to an individual permit if the amendment is not a significant or minor permit amendment prescribed in this Section, based on an evaluation of the information relevant to the amendment.
  2. Examples of an "other" amendment to an individual permit include:
    - a. A change in a construction requirement, disposal method, or operational practice, if the alteration improves the quality of treatment and complies with the requirements of Articles 1 and 2 of this Chapter and provides equal or better performance;
    - b. A change in an interim or final compliance date in a compliance schedule, if the Director determines just cause exists for changing the date;
    - c. A change in the permittee's financial assurance mechanism under ~~R18-9-A203(D)(2)~~ R18-9-A203(C);
    - d. ~~Permit A permit~~ transfer under R18-9-A212;
    - e. ~~Replacement~~ The replacement of monitoring equipment, including a well, if the replacement results in equal or greater monitoring effectiveness;
    - f. Any increase in the volume of pollutants discharged that is less than that described in subsection (B)(2)(a) or ~~(B)(2)(b)~~ (b);
    - g. An adjustment of the permit to conform to rule or statutory provisions;
    - h. A calculation of alert levels, AQLs, or other permit limits into a permit based on monitoring subsequent to permit issuance;
    - i. An addition of a point of compliance monitor well;
    - ~~h-j.~~ A combination of two or more permits at the same site as specified under R18-9-107; or
    - ~~i-k.~~ An adjustment of monitoring requirements to ensure reclaimed water quality standards developed under A.R.S. § 49-221(E) are met;
    - l. A change in the recordkeeping retention requirement, or
    - m. Incorporation of monitoring requirements to ensure that reclaimed water quality standards specified in 18 A.A.C. 11 are met.
- E. The public notice and public participation requirements of R18-9-108 and R18-9-109 apply to a significant amendment. The public notice requirements apply to an "other" amendment. A minor amendment does not require a public notice or public participation.

#### **R18-9-A212. Permit Transfer**

- A. The owner or operator of a facility subject to the continuance requirements under R18-9-105(A)(1), ~~(A)(2)~~ (2), or ~~(A)(3)~~ (3) shall notify the Department by certified mail within 15 days following a change of ownership. The notice shall include:
  1. The name of the transferor owner or operator;
  2. The name ~~and social security number~~ of the transferee owner or operator, ~~if the transferee owner operator is an individual;~~
  3. The name and location of the facility;
  4. The written agreement between the existing and new permittee indicating a specific date for transfer of all permit responsibility, coverage, and liability;
  5. A signed declaration by the new permittee that the new permittee has reviewed the permit and agrees ~~to be bound by its~~ to the terms of the permit, including fee obligations under A.R.S. § 49-242; and
  6. The applicable fee established in 18 A.A.C. 14.
- B. A permittee may request the Department to transfer an individual permit to a new permittee owner, ~~if the Director amends the permit to identify the new permittee and holds the new permittee responsible for all conditions of the permit.~~
  1. The new permittee owner shall:

- 1-
    - i. Notify the Department by certified mail within 15 days after the change of ownership ~~of the transfer~~ and include a written agreement between the ~~existing~~ previous and new ~~permittee~~ owner indicating a specific date for transfer of all permit responsibility, coverage, and liability;
    - 2- ii. Submit the applicable fee established in 18 A.A.C. 14;
    - 3- iii. Demonstrate the technical and financial capability necessary to fully carry out the terms of the permit according to R18-9-A202 and R18-9-A203;
    - 4- iv. Submit a signed statement ~~by the new permittee~~ that the new permittee owner has reviewed the permit and agrees ~~to be bound by its~~ to the terms of the permit; and
    - 5- v. Provide the Department with a copy of the Certificate of Disclosure required by A.R.S. § 49-109.
  2. If the Director amends the individual permit for the transfer, the Director shall hold the new permittee responsible for all conditions of the permit.
- C. A permittee shall comply with the permit conditions specified under A.R.S. §§ 49-241 through 49-252, and Articles 1 and 2 of this Chapter, ~~regardless of whether the permittee has sold or disposed of the facility, until the Director transfers the permit, regardless of whether the permittee has sold or disposed of the facility.~~

**R18-9-A213. Permit Suspension, Revocation, or Denial or Termination**

- A. ~~The~~ Upon written notification to the permittee, the Director may suspend or revoke an individual permit or a continuance under R18-9-105(A)(1), ~~(A)(2)~~ (2), or ~~(A)(3)~~ (3) for any of the following:
1. A permittee failed to comply with any applicable provision of A.R.S. Title 49, Chapter 2, Article 3; Articles 1 and 2 of this Chapter; or any permit condition-;
  2. A ~~permittee's misrepresentation or omission of any~~ permittee misrepresented or omitted a fact, information, or data related to an Aquifer Protection Permit application or permit ~~conditions~~ condition-;
  3. The Director determines that a permitted activity is causing or will cause a violation of ~~any~~ an Aquifer Water Quality Standard at a point of compliance-;
  4. A permitted discharge is causing or will cause imminent and substantial endangerment to public health or the environment-;
  5. A permittee failed to construct the permitted facility within three years from the date of permit issuance; or
  6. A permittee failed to maintain the financial assurance mechanism under R18-9-A203(C).
- B. The Director may deny an individual permit if the Director determines upon completion of the application process that the applicant has:
1. Failed or refused to correct a deficiency in the permit application;
  2. Failed to demonstrate that the facility and the operation will comply with the requirements of A.R.S. §§ 49-241 through 49-252 and Articles 1 and 2 of this Chapter. ~~This determination shall be based~~ The Director shall base this determination on:
    - a. The information submitted in the Aquifer Protection Permit application,
    - b. Any information submitted to the Department following a public hearing, or
    - c. Any relevant information that is developed or acquired by the Department-;
  3. Provided false or misleading information.
- C. ~~The Director shall terminate an individual permit if:~~
1. The Director issues a Permit Release Notice under R18-9-A209(F)(2) for a closed facility, or
  2. The permittee obtains coverage under another Aquifer Protection Permit.

**R18-9-A214. Requested Coverage Under a General Permit**

- A. If an owner or operator of a facility who applied for or was issued an individual permit qualifies to operate a facility under a general permit established in Article 3 of this Chapter, the owner or operator may request that the individual permit be terminated and replaced by the general permit.
- B. The individual permit is valid and enforceable until the Director:
1. Determines that the permittee qualifies for coverage under a general permit, or
  2. Receives the Notice of Intent to Discharge, or
  3. Issues a written Discharge Authorization, if required, and
  4. The Director issues a Permit Release Notice under R18-9-A209(F)(2).
- C. The owner or operator shall comply with all applicable general permit requirements under Article 3 of this

**PART B. BADCT FOR SEWAGE TREATMENT FACILITIES**

**R18-9-B201. General Considerations and Prohibitions**

- A. Applicability. The requirements in this Article, ~~including BADCT requirements~~, apply to all sewage treatment facilities, including expansions of existing sewage treatment facilities, that treat wastewater containing sewage, unless the discharge is ~~covered~~ authorized by a general permit under Article 3 of this Chapter.
- B. The Director may specify alert levels, discharge limitations, design specifications, and operation and maintenance requirements in the permit that are based upon information provided by the applicant and that meet the requirements under A.R.S. § 49-243(B)(1).
- ~~C. The permittee shall ensure that a sewage treatment facility is operated by a person certified under A.A.C. R18-5-105 for the grade of the facility.~~
- ~~C.D. The Director may specify adherence to an operation and maintenance plan as an Aquifer Protection Permit condition, based on consideration of the factors in A.R.S. § 49-243(B)(1). Operation and maintenance.~~
  - 1. The owner or operator shall maintain, at the sewage treatment facility, an operation and maintenance manual for the facility and shall update the manual as needed.
  - 2. The owner or operator shall use the operation and maintenance manual to guide facility operations to ensure compliance with the terms of the Aquifer Protection Permit and to prevent any environmental nuisance condition.
  - 3. The Director may specify adherence to any operation or maintenance requirement as an Aquifer Protection Permit condition to ensure that the terms of the Aquifer Protection Permit are met.
  - 4. The owner or operator shall make the operation and maintenance manual available to the Department upon request.
- ~~D.E. A person shall not install, or maintain, or cause a connection between any part of a sewage treatment facility and a potable water supply so that sewage or wastewater contaminates a potable or public water supply.~~
- ~~E.F. A person shall not bypass untreated raw or partially treated sewage from a sewage treatment facility.~~
- ~~F.G. Reclaimed water dispensed to a direct reuse site from a sewage treatment facility is regulated under Reclaimed Water Quality Standards established under A.R.S. § 49-221(E) and reclaimed water permit requirements under A.R.S. § 49-203(A)(6).~~
- ~~G.H. The preparation, transport, or land application of person preparing, transporting, or land applying any biosolid generated by a sewage treatment facility ~~is regulated under 18 A.A.C. 13, Article 15~~ shall comply with 18 A.A.C. 9, Article 10.~~
- ~~H.I. The Department shall not publish a Notice of Preliminary Decision to issue an individual permit or amendment under R18-9-A211(B)(2)(b) or an amendment under R18-9-A211(B)(6) for a sewage treatment facility that is not in conformance with the Certified Areawide Water Quality Management Plan and the Facility Plan.~~
- ~~I.J. The owner or operator of a sewage treatment facility that is a new facility or undergoing a major modification shall provide setbacks ~~from the nearest adjacent property line using the following information:~~ established in the following table. Setbacks are measured from the treatment and disposal components within the sewage treatment facility to the nearest property line of an adjacent dwelling, workplace, or private property. If a setback cannot be met for a facility undergoing a major modification that incorporates full noise, odor, and aesthetic controls, the owner or operator shall not further encroach into setback distances existing before the major modification except as allowed in subsection (J)(2).~~

<b>Sewage Treatment Facility Design Flow (gallons per day)</b>	<b>No Noise, Odor, or Aesthetic Controls (feet)</b>	<b>Full Noise, Odor, and Aesthetic Controls (feet)</b>
3000 to less than 24,000	250	25
24,000 to less than 100,000	350	50
100,000 to less than 500,000	500	100



500,000 to less than 1,000,000	750	250
1,000,000 or greater	1000	350

1. Full noise, odor, and aesthetic controls means that all noise due to the sewage treatment facility does not exceed 50 decibels at the facility property boundary on the A network of a sound level meter, all odor-producing components of the sewage treatment components facility are fully enclosed, and odor scrubbers are installed on all vents, and fencing is aesthetically matched to that in the area surrounding the facility.
2. The owner or operator may decrease setbacks if:
  - a. Allowed by local ordinance,
  - b. The location of the sewage treatment facility is expressly described in a master plan or other similar document and the applicant demonstrates to the Department that the document was made available to affected property owners at the time of property development surrounding the sewage treatment facility, or
  - c. if setback Setback waivers are obtained from affected property owners in which the property owner acknowledges awareness of the established setbacks, basic design of the sewage treatment facility, and the potential for noise and odor.

K. The owner or operator of a sewage treatment facility shall not operate the facility so as to emit a disagreeable odor on a persistent basis beyond the setback distances specified in subsection (J).

**R18-9-B202. Application Requirements Design Report**

- A. An applicant shall submit a design report signed, dated, and sealed by an Arizona-registered professional engineer. The design report shall include the following information:
  1. Wastewater characterization, including quantity, quality, seasonality, and impact of increased flows as the facility reaches design flow;
  2. The proposed method of disposal, including solids management;
  3. A description of the treatment unit processes and containment structures, including diagrams and calculations that demonstrate that the design meets BADCT requirements and will achieve treatment levels specified in R18-9-B204, and R18-9-B205 and R18-9-B206, as applicable. If soil aquifer treatment or other aspects of site conditions are used to meet BADCT requirements, the applicant shall document performance of the site in the design report or the hydrogeologic report;
  4. A description of planned normal operation;
  5. A description of operation and maintenance, an operation and maintenance plan, A description of key maintenance activities and a description of contingency and emergency operation of for the system facility;
  6. A description of construction management controls;
  7. A description of the system startup plan, including pre-operational testing, expected treated wastewater characteristics and monitoring requirements during startup, expected time-frame for meeting performance requirements specified in R18-9-B204(C) R18-9-B204, and any other special startup condition that may merit consideration in the individual permit;
  8. A site diagram depicting compliance with the setback requirements established in R18-9-B201(I);
  9. For a sewage treatment facility with design flow under one million gallons per day, a design report and engineering plans and specifications. The Director may waive this requirement if the Director previously approved engineering plans and specifications submitted by the same owner or operator for a sewage treatment facility with design flow of more than one million gallons per day;
  - ~~10. A certification by an Arizona-registered professional engineer that all other aspects of the design, including pipe coding, auxiliary power sources, and separation requirements, comply with applicable statutes, rules, and codes.~~
  10. The design flow of the facility. The design flow of a sewage treatment facility is calculated as the average daily flow for the month with the highest total flow during a calendar year, unless a different basis is proposed by the applicant and approved by the Department;
  11. The maximum daily flow of the facility, which guides the sizing of biological processes, is the maximum flow rate that occurs over a 24-hour period within an annual cycle of flow variations, unless a different basis is proposed by the applicant and approved by the Department;

12. Specifications for pipe, standby power source, and water and sewer line separation.
- ~~B. The Department may inspect an applicant's facility without notice to ensure that construction generally conforms to the design report.~~
- ~~B. In addition to the technical and financial capability requirements specified in R18-9-A202 and R18-9-A203, the following requirements apply if construction or expansion of a private sewage treatment facility has been approved for treatment of sewage from a subdivision under R18-5-402. These requirements do not apply to a subdivision where each lot has an on-site wastewater treatment facility as defined in A.R.S. § 49-201 for sewage disposal:~~
- ~~1. If responsibility for operation of the private sewage treatment facility will be conveyed to a homeowner's association or a private operator after construction, the applicant shall demonstrate that the homeowner's association or private operator is technically capable of carrying out the terms of the permit and all treatment performance requirements specified in R18-9-B204.~~
  - ~~2. If responsibility for operation of the private sewage treatment facility will be conveyed to a homeowner's association or a private operator after construction, the applicant shall demonstrate that the homeowner's association or private operator is financially capable of carrying out the terms of the permit and all treatment performance requirements specified in R18-9-B204, including monitoring, recordkeeping, and assuring that the system is under continuous operational control by the correct classification of a certified operator, as specified in 18 A.A.C. 5, Article 1.~~

**R18-9-B203. ~~Application Review and Approval~~ Engineering Plans and Specifications**

- A. ~~To ensure that BADCT requirements are met, the Department shall ask to review~~ The applicant shall submit engineering plans and specifications for a sewage treatment facility with a design flow of one million gallons per day or greater if, upon review of the design report required in R18-9-B202, the Department finds that:
1. The design report ~~required in R18-9-B202(A)~~ fails to provide sufficient detail to determine adequacy of the proposed sewage treatment facility design;
  2. The described design is innovative and does not reflect treatment technologies generally accepted as demonstrated within the industry;
  3. The Department's calculations of removal efficiencies based on the design report show that the treatment facility cannot achieve BADCT treatment performance requirements;
  4. The design report does not demonstrate:
    - a. Protection from physical damage due to a 100-year flood,
    - b. Ability to continuously operate during a 25-year flood, or
    - c. Provision for a standby power source;
  5. The design report shows inconsistency in sizing or compatibility between two or more unit process components of the sewage treatment facility;
  6. The designer of the facility has:
    - a. Designed a sewage treatment facility of at least a similar size on less than three previous occasions,
    - b. Designed a sewage treatment facility that has been the subject of a Director enforcement action due to the facility design, or
    - c. Been found by the Board of Technical Registration to have violated a provision ~~of~~ in A.R.S. Title 32, Chapter 1;
  7. The permittee seeks to expand its sewage treatment facility and the Department believes that BADCT the facility will require upgrades to the design ~~that have not been~~ described and evaluated in the design report to meet the performance requirements; or
  8. The construction does not conform to the design report if the sewage treatment facility has been constructed.
- B. The Department shall review engineering plans and specifications and a design report upon request by an applicant seeking a permit for a sewage treatment facility, regardless of its flow.
- C. The Department may inspect an applicant's facility without notice to ensure that construction generally conforms to the engineering plans and specifications.

**R18-9-B204. ~~Treatment Performance Requirements For New Facilities~~ Treatment Performance Requirements for a New Facility**

- A. Definition. "Week" means a seven-day period starting on Monday and ending on the following Sunday.
- ~~A.B.~~ An owner or operator of a new sewage treatment facility shall ensure that the facility meets the following performance requirements upon release of the treated wastewater at the outfall:

1. Secondary treatment levels.
  - a. Five-day biochemical oxygen demand (BOD<sub>5</sub>) less than 30 mg/l (30-day average) and 45 mg/l (seven-day average), or carbonaceous biochemical oxygen demand (CBOD<sub>5</sub>) less than 25 mg/l (30-day average) or 40 mg/l (seven-day average);
  - b. Total suspended solids (TSS) less than 30 mg/l (30-day average) and 45 mg/l (seven-day average);
  - c. pH maintained between 6.0 and 9.0 standard units; and
  - d. A removal efficiency of 85% percent for BOD<sub>5</sub>, CBOD<sub>5</sub>, and TSS.
2. Secondary treatment by waste stabilization ponds is not considered BADCT unless an applicant demonstrates to the Department that site-specific hydrologic and geologic characteristics and other environmental factors are sufficient to justify use of ponds or this method of treatment.
3. Total nitrogen in the treated wastewater is less than 10 mg/l (five-month rolling geometric mean). If an applicant demonstrates, using appropriate monitoring, that soil aquifer treatment will produce a total nitrogen concentration ~~of~~ less than 10 mg/l in wastewater that percolates to groundwater, the Department may approve soil aquifer treatment for removal of total nitrogen as an alternative to meeting the performance requirement of 10 mg/l at the outfall.
4. Pathogen removal.
  - a. ~~A~~ For a sewage treatment facility with a design flow of less than 250,000 gallons per day: ~~A fecal coliform limit of 200 colony forming units per 100 ml (seven sample median) and 800 colony forming units per 100 ml (single sample maximum) applies if:~~
    - i. ~~Depth to the seasonally high groundwater table is greater than 20 feet, and~~
    - ii. ~~The system is not located above karstic or fractured bedrock.~~
      - i. Either the concentration of fecal coliform organisms in four of the wastewater samples collected during the week is less than 200/100 ml or the concentration of *E. coli* bacteria in four of the wastewater samples collected during the week is less than 126/100 ml, based on a sampling frequency of seven daily samples per week;
      - ii. Either the single sample maximum concentration of fecal coliform organisms in a wastewater sample is not greater than 800/100 ml or the single sample maximum concentration of *E. coli* bacteria in a wastewater sample is not greater than 504/100 ml;
      - iii. If the depth to the seasonally high groundwater table beneath the sewage treatment facility is less than 20 feet or the facility is located above karstic or fractured bedrock, meet the pathogen removal performance requirements specified in subsection (B)(4)(b);
      - iv. An owner or operator of a facility may request a reduction in the monitoring frequency required in subsection (B)(4)(a)(i) if equipment is installed to continuously monitor an alternative indicator parameter and the owner or operator demonstrates that the continuous monitoring will ensure reliable production of wastewater that meets the numerical concentration levels in subsections (B)(4)(a)(i) and (B)(4)(a)(ii) at the outfall.
  - b. ~~Any~~ For a other sewage treatment facility: ~~A fecal coliform limit, using the membrane filter technique, of 2.2 colony forming units per 100 ml (seven sample median) and less than 23 colony forming units per 100 ml (single sample maximum), or equivalent numbers using the multiple tube fermentation method, applies. Either no fecal coliform organisms or *E. coli* bacteria are detected in four of the wastewater samples collected during the week, based on a sampling frequency of seven daily samples per week, and the single sample maximum concentration of fecal coliform organisms is not greater than 23/100 ml or the single sample maximum concentration of *E. coli* is not greater than 15/100 ml. ~~Unit~~ An owner or operator may use unit treatment processes, such as chlorination-dechlorination, ultraviolet, and ozone ~~may be used~~ to achieve this standard.~~
  - c. An owner or operator of a facility may request a reduction in the monitoring frequency required in subsection (B)(4)(b) if equipment is installed to continuously monitor an alternative indicator parameter and the owner or operator demonstrates that the continuous monitoring will ensure reliable production of wastewater that meets the numerical concentration levels in subsections (B)(4)(b) at the outfall.
  - ~~e.d.~~ The Department may approve soil aquifer treatment for the removal of fecal coliform or *E.*

coli bacteria as an alternative to meeting the performance requirement in subsection ~~(B)(4)(b)~~ (B)(4)(b), if the soil aquifer treatment process will produce a fecal coliform or E. coli bacteria concentration less than that required under subsection ~~(B)(4)(b)~~ (B)(4)(b) in wastewater that percolates to groundwater.

5. Unless governed by A.R.S. § 49-243(I), the performance requirement for each constituent regulated under R18-11-406(B) through (E) is the numeric Aquifer Water Quality Standard.
6. The performance requirement for a constituent regulated under A.R.S. § 49-243(I) is removal to the greatest extent practical regardless of cost.
  - a. An operator shall minimize trihalomethane compounds generated as disinfection byproducts using chlorination, dechlorination, ultraviolet, or ozone as the disinfection system or using a technology demonstrated to have equivalent or better performance for removing or preventing trihalomethane compounds.
  - b. For other pollutants regulated by A.R.S. § 49-243(I), an operator shall use one of the following methods to achieve industrial pretreatment:
    - i. Regulate industrial sources of influent to the sewage treatment facility by setting limits on pollutant concentrations, monitoring for pollutants, and enforcing the limits to reduce, eliminate, or alter the nature of a pollutant before release into a sewage collection system; or
    - ii. Meet the pretreatment requirements of ~~Section 307 of the Federal Water Pollution Control Act~~ A.R.S. § 49-255.02 or
    - iii. For sewage treatment facilities without significant industrial input, conduct periodic monitoring to detect industrial discharge.
7. A maximum seepage rate less than 550 gallons per day per acre for all containment structures within the treatment works. A sewage treatment facility that consists solely of containment structures with no other form of discharge complies with this Part by operating below the maximum 550 gallon per day per acre seepage rate.

~~B.C.~~ The Director shall incorporate treated wastewater discharge limitations and associated monitoring specified in this Section into the individual permit to ensure compliance with the BADCT requirements.

~~C.D.~~ An applicant shall formally request and justify an alternative that allows less stringent performance than that established in this Section, based on the criteria specified in A.R.S. § 49-243(B)(1), ~~including in the justification a consideration of site-specific hydrologic and geologic characteristics and other environmental factors, facility size, method of wastewater disposal or direct reuse, proportion of sewage to total industrial wastewater volume, and the seasonality of the service area for the sewage treatment facility.~~

~~E.~~ If a the request specified in subsection (D) involves treatment or disposal works that are a demonstration, experimental, or pilot project, the Department shall take into account the factors and may issue an individual permit that places greater reliance on monitoring to ensure operational capability.

#### **R18-9-B205. Treatment Performance Requirements for an Existing Facility**

For ~~an existing~~ a sewage treatment facility that is an existing facility defined in A.R.S. § 49-201(16), the BADCT shall conform with the following:

1. The designer shall identify one or more design improvements that brings the facility closer to or within the treatment performance requirements specified in R18-9-B204, considering the factors listed in A.R.S. § 49-243(B)(1)(a) and (B)(1)(c) through ~~(B)(1)(b)~~ (h);
2. The designer may eliminate from consideration alternatives identified in subsection ~~(4)~~ (A)(1) that are more expensive than the number of gallons of design flow times ~~\$0.05~~ \$1.00 per gallon; and
3. The designer shall select ~~as the BADCT for the facility~~ a design that incorporates one or more of the considered alternatives by giving preference to measures that will provide the greatest improvement toward meeting the treatment performance requirements specified in R18-9-204.

#### **R18-9-B206. Treatment Performance Requirements for Expansion of a Permitted Facility**

For an expansion of a sewage treatment facility ~~with a current individual permit~~, the BADCT shall conform with the following:

1. New facility BADCT requirements ~~of in~~ in R18-9-B204 apply to the following expansions:
  - a. ~~Continue to apply for the part of the facility that conformed to the BADCT requirements for a new facility at the last permit issuance;~~
  - b. ~~Apply to the addition of a process or major piece of production equipment, building, or~~

- ~~structure that is physically separate from a facility and causes discharge; and~~
- ~~c. Apply to the part of the facility that has not been required to conform to BADCT requirements for new facilities, if a facility or part of a facility has undergone or will undergo any change identified in R18-9-A211(B)(2).~~
- a. An increase in design flow by an amount equal to or greater than the increases specified in R18-9-A211(B)(2)(b), or
- b. An addition of a physically separate process or a major piece of production equipment, building, or structure that causes a separate discharge, but only to the extent that the performance requirements for the pollutants addressed by R18-9-B204 can practicably be achieved by the addition.
2. BADCT requirements for existing facilities established in R18-9-B205 apply to ~~expansions~~ an expansion not covered by ~~subsections (1)(a), (1)(b), or (1)(c)~~ under subsection (1).

### ARTICLE 3. AQUIFER PROTECTION PERMITS - GENERAL PERMITS PART A. GENERAL PROVISIONS

#### R18-9-A301. Discharging Under a General Permit

- A. Discharging Requirements.
1. Type 1 General Permit. A person may discharge under a Type 1 General Permit without submitting a Notice of Intent to Discharge if the discharge is authorized by and meets:
    - a. The applicable requirements of Article 3, Part A of this Chapter; and
    - b. The specific terms of the ~~applicable~~ Type 1 General Permit, established in Article 3, Part B of this Chapter.
  2. Type 2 General Permit. A person may discharge under a Type 2 General Permit if:
    - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the ~~applicable~~ Type 2 General Permit established in Article 3, Part C of this Chapter;
    - b. The person files a Notice of Intent to Discharge under subsection (B); and
    - c. The person submits the applicable fee established in 18 A.A.C. 14.
  3. Type 3 General Permit. A person may discharge under a Type 3 General Permit if:
    - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the ~~applicable~~ Type 3 General Permit established in Article 3, Part D of this Chapter; ~~and~~
    - b. The person files a Notice of Intent to Discharge under subsection (B);
    - c. The person satisfies any deficiency requests from the Department regarding the administrative completeness review and substantive review and receives a written ~~Verification of General Permit Conformance~~ Discharge Authorization from the Director; and
    - d. The person submits the applicable fee established in 18 A.A.C. 14.
  4. Type 4 General Permit. A person may discharge under a Type 4 General Permit if:
    - a. The discharge is authorized by and meets the applicable requirements of Article 3, Part A of this Chapter and the specific terms of the ~~applicable~~ Type 4 General Permit, established in Article 3, Part E of this Chapter;
    - b. The person files a Notice of Intent to Discharge under subsection (B);
    - c. The person satisfies any deficiency requests from the Department regarding the administrative completeness review and substantive review, including ~~deficiencies~~ any deficiency relating to the construction of the facility;
    - d. The person receives a written Construction Authorization from the Director before facility construction is initiated;
    - e. The person receives a written ~~Verification of General Permit Conformance~~ Discharge Authorization from the Director before facility discharge is initiated; and
    - ~~d.f.~~ The person submits the applicable fee established in 18 A.A.C. 14 or according to A.R.S. §§ 49-107 and 49-112.
- B. Notice of Intent to Discharge.
1. A person seeking a Discharge Authorization under a general permit under subsections (A)(2), ~~(A)(3)~~ (3), or ~~(A)(4)~~ (4) shall submit, by certified mail, in person, or by another method approved by the Department, a Notice of Intent to Discharge on a form provided by the Department.

2. The Notice of Intent to Discharge shall include:
    - a. The name, address, and telephone number of the applicant;
    - ~~b. The social security number of the applicant, if the applicant is an individual;~~
    - ~~e.b.~~ The name, address, and telephone number of a contact person familiar with the operation of the facility;
    - ~~d.c.~~ The name, position, address, and telephone number of the owner or operator of the facility who has overall responsibility for compliance with the permit;
    - ~~e.d.~~ The legal description of the discharge areas, including the latitude and longitude coordinates;
    - ~~f.e.~~ A narrative description of the facility or project, including expected dates of operation, rate, and volume of discharge;
    - ~~g.f.~~ The supplemental information ~~required~~ specified for the general permit authorization;
    - ~~h.g.~~ A listing of any other federal or state environmental permits issued for or needed by the facility, including any individual permit, Groundwater Quality Protection Permit, or Notice of Disposal that may have previously authorized the discharge; and
    - ~~i.h.~~ A signature on the Notice of Intent to Discharge certifying that the permittee agrees to comply with all applicable requirements of this Article, including specific terms of the applicable general permit.
  3. Receipt of a completed Notice of Intent to Discharge by the Department begins the administrative completeness review for a Type 3 and Type 4 General Permit.
- C. Type 3 General Permit authorization review.
1. Inspection. The Department may inspect the facility to determine that the applicable terms of the general permit have been met.
  2. ~~Verification Discharge Authorization~~ issuance.
    - a. If the Department determines, based on its review and an inspection, if conducted, that the facility conforms with to the requirements of the general permit and the applicable requirements of this Article, the Director shall issue a ~~Verification of General Permit Conformance Discharge Authorization~~.
    - b. The ~~Verification of General Permit Conformance Discharge Authorization~~ authorizes the person to discharge under terms of the general permit and applicable requirements of this Article.
  3. ~~Verification Discharge Authorization~~ denial. If the Department determines, based on its review and an inspection, if conducted, that the discharge facility does not conform to the requirements of the general permit or other applicable requirements of this Article, the Director shall notify the person of ~~its~~ the decision not to issue the ~~Verification of General Permit Conformance Discharge Authorization~~ and the person shall not discharge under the general permit. The notification shall inform the person of:
    - a. The reason for the denial with reference to the statute or rule on which the denial is based;
    - b. The person's right to appeal the denial, including the number of days the applicant has to file a protest challenging the denial and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
    - c. The person's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.
- D. Type 4 General Permit review.
1. Pre-construction phase and facility construction. A person shall not begin facility construction until the Director issues a Construction Authorization.
    - a. Inspection. The Department may inspect the facility site before construction to determine that the applicable terms of the general permit will be met.
    - b. Review. If the Department determines, based on an inspection or its review of, design plans, specifications, or other required documents, ~~or an inspection~~, that the facility does not conform with the requirements of the general permit or other applicable requirements of this Article, the Department shall make a written request for additional information.
    - c. ~~Notification of provisional verification~~ Construction Authorization. If the Department determines, based on the review described in subsection (D)(1)(b) and any additional information submitted in response to a written request, that the facility design conforms with the requirements of the general permit and other applicable requirements of this Article, the Director shall ~~provide a notification of Provisional Verification of General Permit~~

- ~~Conformance~~ issue a Construction Authorization to the person seeking to discharge. A Construction Authorization for an on-site wastewater treatment facility shall contain:
- ~~i.~~ The design flow of the facility,
  - ~~ii.~~ The characteristics of the wastewater sources contributing to the facility, and
  - ~~iii.~~ A list of the documents that are the basis for the authorization.
- d. ~~Notification of failure to conform to general permit requirements~~ Construction Authorization denial. If the Department determines, based on the review described in subsection (D)(1)(b) and any additional information submitted in response to a written request, that the facility design does not conform to the ~~terms~~ requirements of the general permit ~~and or~~ other applicable requirements of this Article, the Director shall notify the person ~~seeking to discharge of it's~~ the decision not to issue a ~~Verification of General Permit Conformance Construction Authorization.~~ The notification shall ~~follow the requirements of subsection include the information listed in subsections~~ (D)(2)(d)(ii) and (iii).
- e. Construction.
- ~~i.~~ The person seeking to discharge shall not begin facility construction until the Director provides notification of Provisional Verification of General Permit Conformance.
  - ~~ii-i.~~ The person seeking verification to discharge may take up to two years to shall complete construction within two years of receiving the Construction Authorization.
  - ~~iii-ii.~~ Construction shall conform with the plans and documents ~~verified~~ authorized by the Department under subsection ~~(D)(1)(b)~~ (D)(1)(c). A change in location, configuration, dimension, depth, material, or installation procedure does not require approval by the Department if the change continues to conform with the specific standard in this Article used as the basis for the original design.
  - ~~iv-iii.~~ All The person shall record all changes made during construction, including any changes approved under R18-9-A312(G), ~~shall be recorded~~ on the site plan as specified in R18-9-A309(C)(1) or on ~~applicable~~ documents as specified in R18-9-A309(C)(2) and R18-9-E301(E), as applicable.
- f. Completion of construction.
- i. After completing construction of the facility, the person seeking to discharge shall submit ~~to the Department the~~ any applicable ~~verification~~ documents specified in R18-9-A309(C) and R18-9-E301(E) with the Request for Discharge Authorization form Receipt of the documents by the Department initiates the post-construction review phase.
  - ii. If the Department ~~receives no verification~~ does not receive the Request for Discharge Authorization form and applicable documents by the end of the two-year construction period, the Notice of Intent to Discharge expires, and the person shall not continue construction or discharge.
  - iii. If the Notice of Intent to Discharge expires, the person shall submit a new Notice of Intent to Discharge under subsection (B) and the applicable fee under subsection (A)(4)(f) to begin or continue construction.
2. Post-construction phase.
- a. Inspection. The Department may inspect the facility before issuing a ~~Verification of General Permit Conformance Discharge Authorization~~ to determine that:
    - i. The construction conforms with the design ~~verified~~ authorized by the Department under subsection ~~(D)(2)(c)~~ (D)(1)(c) and any changes recorded on the site plan as specified ~~by in~~ in R18-9-A309(C)(1) or other documents as specified ~~by in~~ in R18-9-A309(C)(2) and R18-9-E301(E), as applicable;
    - ii. Terms of the general permit and applicable terms of this Article ~~will be~~ are met.
  - b. Deficiencies. If the Department identifies deficiencies in the constructed facility or in documents submitted in fulfillment of the ~~Verification of General Permit Conformance Discharge Authorization,~~ the Director shall provide a written explanation of the deficiencies to the person.
  - c. ~~Verification of General Permit Conformance~~ Discharge Authorization issuance.
    - i. Upon satisfactory completion of construction and documents required under R18-9-A309(C)(1), ~~or R18-9-A309(C)(2), or R18-9-E301(E),~~ as applicable, the Director shall issue a ~~Verification of General Permit Conformance Discharge Authorization.~~

- ii. ~~The Verification of General Permit Conformance authorizes the Discharge Authorization~~ allows a person to discharge under terms of the general permit and applicable requirements of this Article and the stated specifications in the Construction Authorization.
- d. ~~Verification~~ Discharge Authorization denial. If, after receiving evidence of correction submitted by the person seeking to discharge, the Department determines that the deficiencies are not satisfactorily corrected, the Director shall notify the person seeking to discharge of the Director's decision not to issue the ~~Verification of General Permit Conformance~~ Discharge Authorization and the person shall not discharge under the general permit. The notification shall inform the person of:
  - i. The reason for the denial with reference to the statute or rule on which the denial is based;
  - ii. The person's right to appeal the denial, including the number of days the applicant has to file a protest challenging the denial and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
  - iii. The person's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.

**R18-9-A303. Permit Renewal of a Discharge Authorization**

- A. Unless a Discharge Authorization under a general permit is transferred or expires, a facility is authorized to a person may discharge under the general permit for the ~~operational life of the facility~~ authorization period as specified by the permit type, including any closure activities required by a specific general permit.
- B. A permittee authorized under a Type or Type 3 General Permit shall submit ~~the an~~ application for renewal on a form provided by the Department with the applicable fee established in 18 A.A.C. 14 at least ~~90~~ 30 days before the end of the renewal period.
  - 1. The following are the renewal periods for Type 2 ~~General Permits~~ and Type 3 General ~~Permits~~ Discharge Authorizations:
    - a. 2.01 General Permit, five years;
    - b. 2.02 General Permit, seven years;
    - c. 2.03 General Permit, two years;
    - d. 2.04 General Permit, five years;
    - e. 2.05 General Permit, five years;
    - f. 2.06 General Permit, five years;
    - ~~d-g.~~ Type 3 General Permits, five years.
  - 2. The renewal period for a Type 2 General Permit begins on the date ~~of the Department's receipt of~~ Department receives the Notice of Intent to Discharge.
  - 3. The renewal period for a Type 3 General Permit begins on the date ~~that~~ the Director issues the written ~~Verification of General Permit Conformance~~ Discharge Authorization.
- C. If the ~~general permit~~ Discharge Authorization is not renewed within the renewal period specified in subsection (B)(1), the ~~general permit~~ Discharge Authorization expires.

**R18-9-A304. Notice of Transfer**

- A. If a change of ownership occurs for a Type 2, Type 3, or ~~Type 4~~ 4.01 General Permit facility, the permittee shall provide a Notice of Transfer to the Department or to the health or environmental agency delegated by the Director to administer Type 2, Type 3, or 4.01 General Permits, by certified mail within 15 days after the date that ownership changes. The Notice of Transfer, in a format approved by the Department, shall include:
  - 1. Any information that has changed from the original Notice of Intent to Discharge,
  - 2. Any other transfer requirements specified for the general permit, and
  - 3. The applicable fee established in 18 A.A.C. 14.
- B. The Department may require a Type 2, Type 3, or ~~Type 4~~ 4.01 General Permit permittee to submit a new Notice of Intent to Discharge and to obtain a new ~~verifications~~ authorization under R18-9-A301(A)(3) and ~~(A)(4)~~ (4), as applicable, if the volume or characteristics of the discharge have changed from the original application.
- C. A permittee transferring ownership of an on-site wastewater treatment facility operating under a 1.09 General Permit or a 4.02 through 4.23 General Permit shall follow the requirements under R18-9-A316.



### **R18-9-A305. Facility Expansion**

- A. A permittee may expand a Type 2 General Permit facility ~~may be expanded~~ if, before the expansion, the permittee provides the Department with the following information by certified mail:
1. An updated Notice of Intent to Discharge,
  2. A certification signed by the facility owner stating that the expansion continues to meet all the conditions of the applicable general permit, and
  3. The applicable fee established under 18 A.A.C. 14.
- B. A permittee may expand a Type 3 or Type 4 General Permit facility ~~may be expanded~~ contingent on review and verification authorization by the Department of a new Notice of Intent to Discharge.
1. The person submitting the Notice of Intent to Discharge for the expansion may reference the previous Notice of Intent to Discharge if the previous information is identical, but shall provide full and detailed information for any changed items.
  2. The Notice of Intent to Discharge shall include:
    - a. Any applicable fee established ~~by~~ under 18 A.A.C. 14, and
    - b. A certification signed by the facility owner stating that the expansion continues to meet all of the requirements relating to the applicable general permit.
  3. Upon receiving the Notice of Intent to Discharge, the Department shall follow the applicable review and verification authorization procedures described in R18-9-A301(A)(3) or ~~(A)(4)~~ (4).

### **R18-9-A306. Closure**

- ~~A. In addition to the closure requirements specified in a general permit, a permittee shall submit the closure plan specified under A.R.S. § 49-252.~~
- ~~B. The closure plan submitted under A.R.S. § 49-252 meets the clean closure requirement if the permittee:~~
- ~~1. Removes material that may contribute to a continued discharge; and~~
  - ~~2. Eliminates, to the greatest degree practical, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance.~~
- ~~C. For an on-site wastewater treatment facility or a 1.09 General Permit facility, a permittee shall comply with the requirements of R18-9-A309(D) to meet the requirements of this Section.~~
- A. A permittee shall close a facility authorized to discharge under a general permit, as follows to satisfy the requirements under of A.R.S. § 49-252:
1. If the discharge is authorized under a 1.01 through 1.08, 1.10, 1.11, 2.05, 2.06, or 4.01 General Permit; closure notification is unnecessary and clean closure approval by the Department is presumed if the following conditions are met:
    - a. The permittee removes material that may contribute to a continued discharge; and
    - b. The permittee eliminates, to the greatest degree practical, any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance.
  2. If the discharge is authorized under a 2.02, 3.02 through 3.07, or 4.23 General Permit, the permittee shall submit notice and a closure plan for evaluation according to A.R.S. § 49-252. The Department shall accept that the facility meets clean closure requirements if the plan indicates that:
    - a. Material that may contribute to a continued discharge is removed;
    - b. The permittee has eliminated to the greatest degree practicable any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance; and
    - c. Closure requirements, if any, stipulated in the general permit are met;
  3. If the discharge is authorized under a 2.01, 2.03, 2.04, 3.01, or 3.03 General Permit, the permittee shall comply with the closure requirements in the general permit; and
  4. If the discharge is authorized under a 1.09 or 4.02 through 4.22 General Permit, the permittee shall comply with the closure requirements of R18-9-A309(D) to meet the requirements of this Section.
- ~~DB.~~ For a facility operating under a general permit and located at a site where an individual area-wide permit has been issued, a permittee may defer some or all closure activities required by this subsection if the Director approves the deferral in writing. The permittee shall perform closure activities shall be performed no later than the closure activities identified in the individual area-wide permit.

### **R18-9-A307. Permit Revocation of Coverage Under a General Permit**

- A. The Director shall revoke coverage under a general permit and require the permittee to obtain an individual permit for any of the following:
1. The permittee fails to comply with the terms of the general permit as described in this Article, or
  2. The discharge activity conducted under the terms of a general permit causes or contributes to the violation of an Aquifer Water Quality Standard at the applicable point of compliance.
- B. The Director ~~shall~~ may revoke coverage under a general permit for any or all facilities within a specific geographic area, if, due to geologic or hydrologic conditions, the cumulative discharge of the facilities has violated or will violate an Aquifer Water Quality Standard established under A.R.S. §§ 49-221 and 49-223. Unless the public health or safety is jeopardized, the Director may allow continuation of a discharge ~~for the revoked general permit~~ until the Department:
1. ~~Processes the application for~~ Issues a single individual permit, ~~or~~
  2. ~~Authorizes a discharge under another general permit, or~~
  - 2-3. ~~Consolidates the discharges under the general permits and issues into~~ Consolidates the discharges under the general permits and issues into a single individual permit issued to a political subdivision or other entity that has jurisdiction over the specific geographic area.
- C. ~~If an individual permit is issued to an owner or operator for coverage under a general permit, the general permit is automatically revoked upon issuance of the individual permit allowing the discharge, and notification under subsection (E) is not required.~~
- ~~C-D.~~ Unless allowed under subsection ~~(B)~~(A), if the Director revokes coverage under a general permit, the facility shall not discharge.
- ~~D-E.~~ The If coverage under the general permit is revoked under subsections (A) or (B), the Director shall notify a permittee by certified mail of it's the decision to revoke a general permit. The notification shall include:
1. A brief statement of the reason for the decision,
  2. The effective revocation date of the general permit coverage,
  3. A statement of whether the discharge shall cease or whether the discharge may continue under the terms of revocation in subsection (B),
  4. If the Director requires a person to obtain an individual permit:
    - a. An individual permit application form, and
    - b. A deadline between 90 and 180 days after receipt of the notification for filing the application,
  5. The applicant's right to appeal the revocation, the number of days the applicant has to file an appeal, and the name and telephone number of the Department contact person who can answer questions regarding the appeals process; and
  6. The applicant's right to request an informal settlement conference under A.R.S. §§ 41-1092.03(A) and 41-1092.06.

**R18-9-A309. General Provisions ~~For Type 4 General Permits Concerning~~ for On-site Wastewater Treatment Systems Facilities**

- A. General requirements and prohibitions.
1. ~~Sewage~~ No person shall discharge sewage or wastewater that contains sewage ~~shall not be discharged~~ from an on-site wastewater treatment facility except under an Aquifer Protection Permit issued by the Director.
  2. A person shall not install, allow to be installed, or maintain a connection between any part of an on-site wastewater treatment facility and a drinking water system or supply so that sewage or wastewater contaminates the drinking water.
  3. A person shall not bypass ~~untreated~~ raw or partially treated sewage from an on-site wastewater treatment facility.
  4. A person shall not use a cesspool for sewage disposal.
  5. ~~The Department shall require connection to a sewage collection system if the connection is practical. A connection is practical if the distance to connect to the sewer is 400 feet or less and the total cost of the connection is less than \$6000 if capacity is available and performance of the sewage collection system and receiving sewage treatment facility are not impaired. A person constructing a new on-site wastewater treatment facility or replacing the treatment works or disposal works of an on-site wastewater treatment facility shall connect to a sewage collection system if:~~
    - a. If the distance to connect to the sewer is 400 feet or less and the total cost of the connection is less than \$6000 if capacity is available and performance of the sewage collection system and receiving sewage treatment facility are not impaired;
    - b. A county, municipal, or sanitary district regulation requires connection to the sewage

- collection system:
- c. A requirement of a certified area-wide water quality management plan approved under 18 A.A.C. 5; or
  - c. The Department established connection requirements as part of a Nitrogen Management Area designated under R18-9-A317.
6. The Department shall prohibit installation of an on-site wastewater treatment facility if the installation will create an unsanitary condition or environmental nuisance or cause or contribute to a violation of an Aquifer Water Quality Standard.
- ~~7. A permittee shall service or repair an operating on-site wastewater treatment facility, or install a replacement facility if the facility has created or if its use creates an unsanitary condition or environmental nuisance or has caused or causes a violation of an Aquifer Water Quality Standard.~~
- 8.7. A permittee person shall operate the permitted on-site wastewater treatment facility so that:
- a. Flows to the facility consist of typical sewage and do not include any motor oil, gasoline, paint, varnish, solvent, pesticide, fertilizer, or other material not generally associated with toilet flushing, food preparation, laundry, and personal hygiene;
  - b. Flows to the facility from commercial operations do not contain hazardous substances or hazardous wastes, as defined under A.R.S. § 49-921(5);
  - c. ~~A typical sewage flow with a component from nonresidential such as food preparation, or laundry service, or other source, the sewage~~ If the sewage contains a component of nonresidential flow from nonresidential such as food preparation, or laundry service, or other source, the sewage is adequately pretreated by an interceptor that complies with R18-9-A315 or another device authorized by a general permit or approved by the Department under R18-9-A312(G);
  - d. Except as provided in subsection ~~(A)(8)(c)~~ (A)(7)(c), a sewage flow that does not meet the numerical levels for typical sewage is adequately pretreated to meet the numerical levels before entry into an on-site wastewater treatment facility authorized by this Article;
  - e. Flow to the facility does not exceed the design flow specified in ~~the Verification of General Permit Conformance a Discharge Authorization;~~
  - f. The facility does not create an unsanitary condition or environmental nuisance, or cause or contribute to a violation of a water quality standard; and
- ~~g.g.~~ Activities at the site do not adversely affect the operation of the facility.
8. A person shall control the discharge of total nitrogen from an on-site wastewater treatment facility as follows:
- a. For an on-site wastewater treatment facility operating under the 1.09 General Permit or proposed for construction in a Notice of Intent to Discharge under a Type 4 General Permit and the facility is located within a Nitrogen Management Area, the provisions of R18-9-A317 apply;
  - b. For an on-site wastewater treatment facility proposed for construction in a Notice of Intent to Discharge under a 4.23 General Permit, the provisions of R18-9-E323(A)(4) apply;
  - c. For a subdivision proposed under 18 A.A.C. 5, Article 4, for which on-site wastewater treatment facilities are used for sewage disposal, demonstrate by one of the following methods in the geological report required in R18-5-408(E)(1) that total nitrogen loading from the on-site wastewater treatment facilities to groundwater is controlled:
    - i. Calculations showing that the nitrogen loading over the total area of the proposed subdivision is not more than 0.088 pounds (39.9 grams) of total nitrogen per day per acre calculated at a horizontal plane immediately beneath the active treatment of the disposal fields; or
    - ii. By another means of demonstration that the nitrogen loading to the aquifer due to on-site wastewater treatment facilities within the subdivision does not cause or contribute to a violation of the Aquifer Water Quality Standard for nitrate at the applicable point of compliance;
  - d. For the purpose of subsection (A)(8)(c), the applicant shall presume that 0.0333 pounds (15.0 grams) of total nitrogen per day per person contributes to raw sewage.
9. Repairs.
- a. A person shall submit a Notice of Intent to Discharge before performing any of following work. Routine work that maintains or restores a facility does not require a Notice of Intent to Discharge;

- i. Converting the facility from operation only under gravity to one requiring a pump or other powered equipment for wastewater treatment or disposal;
      - ii. Modifying or replacing a facility operating under a 1.09 General Permit with a different type of treatment or disposal technology;
      - iii. Changing the treatment works or disposal works of a facility authorized under one or more Type 4 General Permits to a technology covered by any other Type 4 General Permit;
      - iv. Extending the disposal works more than 10 feet beyond the footprint of the original disposal works;
      - v. Reconstructing any part of the disposal works in soil that is inadequate for the treated wastewater flow or strength;
      - vi. Reconstructing the disposal works so that it does not meet the minimum vertical separation specified in R18-9-A312(E)(2);
      - vii. Expanding the footprint of the facility into or within setback buffers established in R18-9-A312(C);
      - viii. Modifying a treatment works or disposal works to accommodate a daily design flow or waste load greater than that which is applicable to the original facility; or
      - ix. Modifying the facility to create an unsanitary condition or environmental nuisance or cause or contribute to an exceedance of a water quality standard.
    - b. Components used in a repair shall meet the design, installation, and operational requirements of this Article.
    - c. Local ordinance may provide independent permitting requirements for repair work.
  - 10. Cumulative flows. When there is more than one on-site wastewater treatment facility on a property or on a site under common ownership or subject to a larger plan of sale or development, the Director shall determine whether an individual permit is required or whether the applicant qualifies for a general permit based on the sum of the design flows from the intended installation and existing on-site wastewater treatment facilities on the property or site under common ownership.
    - a. If the sum of the design flows is less than 3000 gallons per day, the Department will process the application under R18-9-E302 through E322, as applicable.
    - b. If the sum of the design flows is equal to or more than 3000 gallons per day but less than 24,000 gallons per day, the Department will process the application under R18-9-E323.
    - c. If the sum of the design flows is equal to or more than 24,000 gallons per day, the Department will consider the project subject to individual permit requirements and not process the application as a Type 4 General Permit.
- B. Notice of Intent to Discharge for a Type 4 General Permit. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the following information in a format approved by the Department:
- 1. A site investigation report that summarizes the results of the site investigation conducted under ~~R18-9-A310(C)~~ R18-9-A310(B), including:
    - a. Results from any soil evaluation, percolation test, or seepage pit performance test; ~~and~~
    - b. ~~Any limiting site conditions identified by the site investigation. Any surface limiting condition identified in R18-9-A310(C)(2); and~~
    - c. Any subsurface limiting condition identified in R18-9-A310(D)(2);
  - 2. A site plan that includes:
    - a. The parcel and lot number, if applicable, the property address or other appropriate legal description, the property size in acres, and the boundaries of the property ~~on which the on-site wastewater treatment facility will be installed;~~
    - b. A plan of the site drawn to scale, dimensioned, and with a north arrow that shows:
      - i. Proposed and existing on-site wastewater treatment facilities; dwellings and other buildings; driveways, swimming pools, tennis courts, wells, ponds, and any other paved, concrete, or water feature; and cut banks, retaining walls, and any other constructed feature that affects proper location, design, construction, or operation of the facility;
      - ii. Any feature less than 200 feet ~~outside the property boundary~~ from the on-site wastewater treatment facility excavation and reserve area that constrains the location of the on-site wastewater treatment facility because of setback limitations specified in

- R18-9-A312(C);
- iii. Topography, delineated with an appropriate contour interval, showing original and post-installation grades;
  - iv. Location and identification of the treatment and disposal works and ~~connecting wastewater~~ pipelines, the reserve disposal area, and location and identification of all sites of percolation testing and soil evaluation performed under R18-9-A310; and
  - v. Location of any public sewer if 400 feet or less from the property line;
- c. ~~For improvements in areas in which occupancy of property may depend on installation of a drinking water well and an on-site wastewater treatment facility, the location of features within the boundaries of each adjoining undeveloped property if setback requirements may mutually constrain well, cut bank, and on-site wastewater treatment facility locations. For adjacent properties that are not within the service area of a public water system, the location of any on-site wastewater treatment facility, drinking water well, or cut bank within 200 feet of the on-site wastewater treatment facility proposed by the applicant;~~
3. ~~Design flow, sources of flow, and characteristics of the sewage. The applicant shall calculate the design flow from a list included with the site plan showing the applicable unit sewage flows into the on-site wastewater treatment facility. The applicant shall prepare this list based on Table 1, Unit Daily Design Flows and include the number of bedrooms and plumbing fixtures if the facility serves a residence. The design flow of the on-site wastewater treatment facility and the expected strength of the wastewater if the strength exceeds the levels for typical sewage:~~
    - a. ~~For a dwelling, a list of the number of bedrooms and plumbing fixtures, and the calculation for design flow of the facility;~~
    - b. ~~For other than a dwelling, a list of each wastewater source and corresponding design flow based on Table 1, Unit Daily Design Flows, and the calculation for the design flow of the facility;~~
  4. ~~For a facility that includes treatment or disposal works permitted under R18-9-E303 through E323:~~
    - 4- a. Construction quality drawings that show the following:
      - i. Systems, subsystems, and key components, including manufacturer's name, model number, and associated construction notes and inspection milestones, as applicable;
      - ii. A title block, including facility owner, revision date, space for addition of the Department's application number, and page numbers;
      - iii. A plan and profile with the elevations of wastewater pipelines, treatment and disposal components, including calculations justifying the absorption area, to allow Department verification of hydraulic and performance characteristics;
      - iv. Cross sections showing wastewater pipelines, construction details and elevations of treatment and disposal components, original and finished grades of the land surface, seasonal high water table if less than 10 feet below the bottom of a disposal field or 60 feet below the bottom of a seepage pit, and a soil elevation evaluation to allow the Department to verify installation design and performance; and
      - v. Drainage pattern, drainage controls, and erosion protection, as applicable, for the facility; and
      - f. ~~Construction quality drawings are not required if the entire facility at the site, including treatment and disposal works, is permitted under R18-9-E302.~~
    - 5- b. A list of materials, components, and equipment for constructing the on-site wastewater treatment facility; ~~A list is not required if the entire facility at the site, including treatment and disposal works, is permitted under R18-9-E302.~~
    - 6- c. ~~An A draft operation and maintenance plan required by R18-9-A313 manual for the on-site wastewater treatment facility consisting of the tasks and schedules for operating and maintaining performance over a 20-year operational life; An operation and maintenance plan is not required if the entire facility at the site, including treatment and disposal works, is permitted under R18-9-E302.~~
  - 7.5. Drawings, reports, and other information that are clear, reproducible, and in a size and format, including electronic, specified by the Department. ~~An applicant may submit the drawings in an electronic format approved by the Department.~~
- C. Additional verification of general permit conformance requirements for a Discharge Authorization for a Type 4 General Permit.

1. If the entire on-site wastewater treatment facility ~~at the site~~, including treatment and disposal works, ~~is will be~~ permitted under ~~the 4.02 General Permit R18-9-E302~~, ~~the Director shall issue the Verification of General Permit Conformance only if and~~ the site plan accurately reflects the final location and configuration of the components of the treatment and disposal works, ~~the Director shall issue the Discharge Authorization.~~
  2. If ~~the facility~~ any portion of the treatment works or disposal works of the facility is permitted under ~~any 4.03 through 4.23 General Permit, R18-9-E303 through R18-9-E323 and the following documents are received by the Department either separately or in some combination of these permits or the 4.02 General Permit~~, the Director shall issue ~~the Verification of General Permit Conformance a Discharge Authorization only if the following record documents have been submitted:~~
    - a. ~~As-built plans showing changes from construction quality drawings submitted under subsection (B)(4);~~
    - b. ~~A final list of equipment and materials, if different from the list specified in showing changes from the list submitted under subsection (B)(5);~~
    - c. ~~A final operation and maintenance plan manual for the on-site wastewater treatment facility consisting of the tasks and schedules for operating and maintaining performance over a 20-year operational life;~~
    - d. ~~Other documents, if required by the separate general permits; and~~
    - e. ~~A Certificate of Completion signed by the person responsible for assuring that installation of the facility conforms with the design approved under the Provisional Verification of General Permit Conformance. Construction Authorization under R18-9-A301(D)(1)(c); and~~
    - f. ~~The name and Registrar of Contractor's license number for the installation contractor.~~
  3. The Director shall specify in the ~~Verification of General Permit Conformance Discharge Authorization:~~
    - a. The permitted design flow of the facility,
    - b. The characteristics of the wastewater sources contributing to the facility, and
    - c. A list of the ~~record~~ documents accepted by the Department satisfying subsection (C)(2).
- D. Closure requirements. A ~~permittee person~~ who permanently discontinues use of, ~~wishes to close~~ an on-site wastewater treatment facility or a cesspool, or is ordered by the Director to close an abandoned facility shall:
1. Remove all sewage from the facility and dispose of the sewage in a lawful manner;
  2. Disconnect and remove electrical and mechanical components;
  3. Remove or collapse the top of any tank or containment structure;
    - a. Punch a hole in the bottom of the tank or containment structure if the bottom is below the seasonal high groundwater table;
    - ~~a-b.~~ Fill the tank or containment structure or any cavity resulting from its removal with earth, sand, gravel, concrete, or other approved material; and
    - ~~b-c.~~ Regrade the surface to provide positive drainage away from the closed area;
  4. Cut and plug both ends of the abandoned sewer drain pipe between the building and the on-site wastewater treatment facility not more than five 5 feet outside the building foundation if practical, or cut and plug as close to each end as possible; and
  5. Notify the applicable county health or environmental department within 30 days of closure.
- E. ~~Proprietary and other reviewed~~ Reviewed products.
1. The Department shall maintain a list of ~~proprietary and other~~ reviewed products ~~that may be used for on-site wastewater treatment facilities to comply with the requirements of this Article. The list shall include that include~~ appropriate information on the applicability and limitations of each product.
  2. The list of ~~proprietary and other~~ reviewed products may include manufactured systems, subsystems, or components within the treatment works and disposal works if the products significantly contribute to the treatment performance of the system or provide the means to overcome site limitations. ~~The In addition to septic tanks and effluent filters, the Department shall will~~ not list components that do not significantly affect treatment performance or provide the means to overcome site limitations.
  3. A person may request that the Department add a product to the list of ~~proprietary and other~~ reviewed products. The request may include a proposed reference design for review. The Department ~~may shall~~ assess fees under R18-14-102 for product review.
  4. The Director may contract for services in administering this subsection.
- F. Recordkeeping. A permittee authorized to discharge under a Type 4 General Permit shall maintain the Discharge Authorization and any applicable documents specified in subsections (C)(1) and (2), for the life of

the facility and make them available to the Department upon request.

**R18-9-A310. Site Investigation ~~For~~ for Type 4 On-site Wastewater Treatment Facilities**

- A. ~~Definition. For purposes of this Section, “clean water” means water free of colloidal material or additives that could affect chemical or physical properties if the water is used for percolation testing or testing of seepage pit performance.~~
- B. ~~The investigator shall perform a site investigation if an on-site wastewater treatment facility is proposed for installation. The applicant shall submit the following information in a format prescribed by the Department and shall provide sufficient data to:~~
1. ~~Determine if any of the following limiting conditions exist:~~
    - a. ~~The soil absorption rate determined by the requirements of this Article is more than 1.20 gallons per square foot per day;~~
    - b. ~~The soil absorption rate determined the requirements of this Article is less than 0.13 gallons per square foot per day;~~
    - c. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to the seasonal high water table is less than the minimum vertical separation specified by R18-9-A312(E), or seasonal saturation at the surface occurs;~~
    - d. ~~The surface slope is greater than 15% at the intended location of the on-site wastewater treatment facility;~~
    - e. ~~Minimum setback distances are not within acceptable limits as specified in R18-9-A312(C);~~
    - f. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will cause surfacing of wastewater at the design flow rate or provide a direct conduit to the aquifer is less than the minimum vertical separation specified by R18-9-A312(E);~~
    - g. ~~Surface drainage characteristics at the intended location of the on-site wastewater treatment facility will adversely affect the ability of the facility to function properly; or~~
    - h. ~~The vertical separation distance from the bottom of the lowest point of the disposal system to a subsurface condition that will convey wastewater to a water of the state to cause or contribute to a violation of an Aquifer Water Quality Standard established under A.R.S. Title 49, Chapter 2, Article 2 is less than the minimum vertical separation specified under R18-9-A312(E).~~
  2. ~~Allow selection of an appropriate on-site wastewater treatment facility for the site considering all limiting conditions that exist;~~
  3. ~~Effectively locate, design, and install a properly operating on-site wastewater treatment facility to serve the anticipated development at the site, whether or not limiting conditions exist.~~
- C. ~~The site investigation shall include the determination of soil characteristics using one or more of the following methods:~~
1. ~~“Standard Practice for Surface Site Characterization for On-site Septic Systems,” published by the American Society for Testing and Materials, (D-5879-95<sup>E1</sup>), approved December 10, 1995;~~
  2. ~~“Standard Practice for Subsurface Site Characterization of Test Pits for On-site Septic Systems,” published by the American Society for Testing and Materials, (D-5921-96<sup>E1</sup>), approved February 10, 1996;~~
  3. ~~“Standard Practice for Soil Investigation and Sampling by Auger Borings,” published by the American Society for Testing and Materials, (D-1452-80), reapproved 1995, if the depth to groundwater may be within the required minimum vertical separation from the bottom of the disposal field.~~
    - a. ~~The information listed in subsections (C)(1), (C)(2) and (C)(3) is incorporated by reference and does not include any later amendments or editions of the incorporated matter.~~
    - b. ~~Copies of the incorporated material are available for inspection at the Department of Environmental Quality and the Office of the Secretary of State, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959.~~
  4. ~~Percolation testing as specified in subsection (E);~~
  5. ~~Seepage pit performance testing as specified in subsection (F);~~
  6. ~~Other methods of soil evaluation, as approved by the Department, that ensure compliance with Aquifer Water Quality Standards through proper system location, selection, design, installation, and~~

operation.

D. ~~Applicability of soil characterization methods.~~

- ~~1. For a seepage pit constructed under the 4.02 General Permit, the investigator shall test seepage pit performance using the procedure specified in subsection (F).~~
- ~~2. Soil characterization using one or more of the American Society for Testing and Materials methods specified in subsections (C)(1), (C)(2), and (C)(3) shall be used if one or more of the following site conditions exists:
  - ~~a. The natural surface slope at the intended location of the on-site wastewater treatment facility, including the disposal field reserve area, is greater than 15%;~~
  - ~~b. Bedrock or similar consolidated rock formation that cannot be excavated with a shovel outcrops from the lot or is known to exist less than 10 feet below the land surface;~~
  - ~~c. The native soil at the surface or encountered in a boring, trench, or hole consists of more than 35% rock fragments greater than three inches across;~~
  - ~~d. The seasonal high water table is known to occur within 10 feet of the natural land surface or seasonal saturation at the natural land surface occurs as indicated by soil mottling, vegetation adapted to near surface saturated soils, nearby springs, seeps, or surface water bodies, or well records that indicate high water table conditions beneath the intended location; or~~
  - ~~e. A percolation test yields results outside the limits specified in subsection (B)(1)(a) and (B)(1)(b).~~~~
- ~~3. Percolation testing as specified in subsection (C)(4) or another method of soil evaluation approved by the Department under subsection (C)(6) may be used to augment soil characterization specified in subsection (D)(2) if useful to locate or design an on-site wastewater treatment facility.~~
- ~~4. Percolation testing as specified in subsection (C)(4) or another method of soil evaluation approved by the Department under subsection (C)(6) shall be used as the sole method of soil characterization if a soil characterization method specified in subsection (D)(2) is not required.~~
- ~~5. Unless testing under subsection (C)(5) is required, the Department shall accept a soil characterization method specified in subsection (D)(2) as the sole soil characterization method.~~

E. ~~Percolation testing.~~

- ~~1. Planning and Preparation. The investigator shall:
  - ~~a. Select a sufficient number of sites for percolation testing to provide adequate and credible information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility and reserve drainfield. At least two sites shall be selected, one in the primary disposal area and one in the reserve disposal area;~~
  - ~~b. Perform percolation testing at each site at appropriate depths within the soil profile to establish the absorption capability of the soil in the primary and reserve disposal areas and to help determine the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the drainfield system. The investigator shall perform percolation tests at multiple depths if there is an indication of an obvious change in soil characteristics that appreciably affect the location, selection, design, installation, or disposal performance of the on-site wastewater treatment facility. The bottom of the percolation test hole is the reference elevation and depth for recordkeeping;~~
  - ~~c. Excavate percolation test holes in undisturbed soil at least 12 inches deep with a cross section of 12 inches square, if square, or a diameter of 15 inches, if round. The investigator shall not alter the structure of the soil during the excavation;~~
  - ~~d. Place percolation test holes away from site or soil features that yield unrepresentative or misleading data pertaining to the location, selection, design, installation, or performance of the on-site wastewater treatment facility;~~
  - ~~e. Scarify smeared soil surfaces within the percolation test holes and remove any loosened materials from the bottom of the hole; and~~
  - ~~f. Use buckets with holes in the sides to support the sidewalls of the percolation test hole, if necessary. Any voids between the walls of the hole and the bucket shall be filled with pea gravel to reduce the impact of the enlarged hole.~~~~
- ~~2. Presoaking procedure. The investigator shall:
  - ~~a. Fill the percolation test hole to a depth of 12 inches above the bottom of the hole with clean water;~~
  - ~~b. Observe the decline of the water level in the hole and record time in minutes for the water to~~~~



- completely drain away;
- c. ~~Repeat the steps specified in subsection (E)(2)(a) and (E)(2)(b) if the water drains away in less than 60 minutes. If the water drains away the second time in less than 60 minutes, the inspector shall repeat the steps specified in subsections (E)(2)(a) and (E)(2)(b) again. If the water drains away again in less than 60 minutes, the percolation test shall be performed following subsection (E)(3); and~~
- d. ~~Add clean water to the hole after 60 minutes and maintain the water at a minimum depth of nine inches for at least four more hours if the water drains away in 60 minutes or greater. The inspector shall protect the hole from precipitation and runoff, and the percolation test specified in subsection (E)(3) shall be performed between 16 and 24 hours after presoaking.~~
- 3. ~~Conducting the test. The investigator shall:~~
  - a. ~~Conduct the percolation test before soil hydraulic conditions established by the presoaking procedure substantially change. Any loose materials in the percolation test hole shall be removed to ensure that the specified dimensions of the hole are maintained and the infiltration surfaces are undisturbed native soil;~~
  - b. ~~Fill the test hole to a depth of six inches above the bottom with clean water;~~
  - c. ~~Observe the decline of the water level in the percolation test hole and determine and record the time in minutes for the water level to fall exactly one inch from a fixed reference point. The investigator shall immediately refill the hole with clean water to a depth of six inches above the bottom, and shall determine and record the time in minutes for the water level to fall exactly one inch. The hole again shall be immediately refilled with clean water to a depth of six inches above the bottom and the time for the water to fall exactly one inch shall be determined and recorded. The investigator shall ensure that the method for measuring water level depth is accurate and does not significantly affect the percolation rate of the test hole;~~
  - d. ~~Use the stabilized percolation rate as the basis for design if, when three consecutive measurements vary by no more than 10%. If three consecutive measurements indicate that the percolation rate results are not stabilizing or the percolation rate is between 60 and 120 minutes per inch, an alternate method based on a graphical solution of the test data shall be used to approximate the stabilized percolation rate; and~~
  - e. ~~Record the percolation rate results in minutes per inch. The submittal of percolation test results to the Department shall include a log of the soil formations encountered; the percent of rock fragments; the texture, structure, consistence, mottles, and depth to groundwater; whether and which test hole was reinforced with a bucket; and locations and depths or elevations of the percolation test holes on the site investigation map.~~
- F. ~~Seepage pit performance testing. An investigator shall test seepage pits described in R18-9-E302 as follows:~~
  - 1. ~~Planning and Preparation. The investigator shall:~~
    - a. ~~Identify primary and reserve disposal areas at the site. A test hole at least 18 inches in diameter shall be drilled in the primary disposal area to the depth of the bottom of the proposed seepage pit, at least 30 feet deep;~~
    - b. ~~Scarify soil surfaces within the test hole and remove loosened materials from the bottom of the hole.~~
  - 2. ~~Presoaking procedure. The investigator shall:~~
    - a. ~~Fill the bottom six inches of the test hole with gravel, if necessary, to prevent scouring;~~
    - b. ~~Fill the test hole with clean water up to three feet below the land surface;~~
    - c. ~~Observe the decline of the water level in the hole and determine the time in hours and minutes for the water to completely drain away;~~
    - d. ~~Repeat the procedure if the water drains away in less than four hours; If the water drains away the second time in less than four hours, then the seepage pit performance test shall be conducted following subsection (F)(3);~~
    - e. ~~Add water to the hole and maintain the water at a depth that leaves at least the top three feet of hole exposed to air for at least four more hours if the water drains away in four or more hours;~~
    - f. ~~Not remove the water from the hole before the seepage pit performance test if there is standing water in the hole after at least 16 hours of presoaking.~~
  - 3. ~~Conducting the test. The investigator shall:~~
    - a. ~~Fill the test hole with clean water up to three feet below land surface;~~

- b. ~~Observe the decline of the water level in the hole and determine and record the vertical distance to the water level from a fixed reference point every 10 minutes; The investigator shall ensure that the method for measuring water level depth is accurate and does not significantly affect the rate of fall of the water level in the test hole;~~
  - c. ~~Measure the decline of the water level continually until three consecutive 10-minute measurements indicate that the infiltration rates are within 10%. If measurements indicate that infiltration is not approaching a steady rate or if the rate is close to a numerical limit specified in R18-9-A312(E), an alternate method based on a graphical solution of the test data shall be used to approximate the final stabilized infiltration rate;~~
  - d. ~~Submit the seepage pit performance test results to the Department, including:
 
    - i. ~~Data, calculations, and findings on a form provided by the Department;~~
    - ii. ~~The log of the test hole indicating lithologic characteristics and points of change; and~~
    - iii. ~~The location of the test hole on the site investigation map.~~~~
  - e. ~~Fill the test hole so that groundwater quality and public safety are not compromised if the seepage pit is drilled elsewhere or if a seepage pit cannot be sited at the location because of unfavorable test results.~~
- G. ~~Soil evaluation procedures. If one or more of the soil evaluation procedures specified by subsection (C)(1), (C)(2), or (C)(3) are used, the following rules apply and the investigator shall:~~
- 1. ~~Ensure that the number of test locations selected for soil evaluation are sufficient to provide adequate and credible information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility and reserve drainfield. The investigator shall select at least two test locations, one in the primary disposal area and one in the reserve disposal area;~~
  - 2. ~~Perform a soil evaluation at each test location at appropriate depths within the soil profile to establish the capability of the soil in the primary and reserve disposal areas to absorb wastewater, and determine the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the drainfield system;~~
  - 3. ~~Not conduct soil evaluations near site or soil features that yield unrepresentative or misleading data relating to the location, selection, design, installation, or performance of the on-site wastewater treatment facility;~~
  - 4. ~~Include the following in a soil evaluation:
 
    - a. ~~A log of soil formations for each test location with information on soil type, texture, and classification; percentage of rock; structure; consistence; and mottles;~~
    - b. ~~A determination of depth to ground water below the land surface by test holes, published groundwater data, subdivision reports, or relevant well data; and~~
    - c. ~~A determination of the water absorption characteristics of the soil, under R18-9-A312(D)(2)(b), sufficient to allow location and design of the on-site wastewater treatment facility.~~~~
- A. ~~Definition. "Clean water" means water free of colloidal material or additives that could affect chemical or physical properties if the water is used for percolation or seepage pit performance testing.~~
- B. ~~Site investigation. An applicant shall conduct a site investigation consisting of a surface characterization under subsection (C) and a subsurface characterization under subsection (D). The applicant shall submit the results in a format prescribed by the Department. The site investigation shall provide sufficient data to:~~
- 1. ~~Select an appropriate site for an on-site wastewater treatment facility considering all surface and subsurface limiting conditions in subsections (C)(2) and (D)(2); and~~
  - 2. ~~Effectively design and install the selected facility to serve the anticipated development at the site, whether or not a limiting condition exists.~~
- C. ~~Surface characterization.~~
- 1. ~~Surface characterization method. The investigator shall characterize the surface of the site where an on-site wastewater treatment facility is proposed for installation using one of the following methods:
 
    - a. ~~The ASTM "Standard Practice for Surface Site Characterization for On-site Septic Systems," published by the American Society for Testing and Materials, (D 5879-95<sup>E1</sup>), approved December 10, 1995. This material is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959; or~~~~

- b. Another method of surface characterization that can, with accuracy and reliability, identify and delineate the surface limiting conditions specified in subsection (C)(2).
2. Surface limiting conditions. The investigator shall determine where any of the following surface limiting conditions exist:
- a. The surface slope is greater than 15 percent at the intended location of the on-site wastewater treatment facility;
  - b. Minimum setback distances are not within the limits specified in R18-9-A312(C);
  - c. Surface drainage characteristics at the intended location of the on-site wastewater treatment facility will adversely affect the ability of the facility to function properly;
  - d. An outcropping of rock that cannot be excavated exists in the intended location of the on-site wastewater treatment facility or will impair the function of soil receiving the discharge;
  - e. More than 35 percent of the surface consists of rock fragments more than 3 inches across in the intended location of the on-site wastewater treatment facility; or
  - f. Fill material deposits exist in the intended location of the on-site wastewater treatment facility.
- D. Subsurface characterization.
1. Subsurface characterization method. The investigator shall characterize the subsurface of the site where an on-site wastewater treatment facility is proposed for installation using one or more of the following methods:
- a. The following ASTM standard practices are incorporated by reference and do not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959:
    - i. “Standard Practice for Subsurface Site Characterization of Test Pits for On-site Septic Systems,” published by the American Society for Testing and Materials, (D5921-96<sup>E1</sup>), approved February 10, 1996; or
    - ii. The standard practice in subsections (D)(1)(a)(i) and “Standard Practice for Soil Investigation and Sampling by Auger Borings,” published by the American Society for Testing and Materials, (D1452-80), reapproved 2000, if the depth to groundwater is less than 10 feet below the bottom of the planned disposal field;
  - b. Percolation testing as specified in subsection (F);
  - c. Seepage pit performance testing as specified in subsection (G); or
  - d. Another method of subsurface characterization, approved by the Department, that ensures compliance with Aquifer Water Quality Standards through proper system location, selection, design, installation, and operation.
2. Subsurface limiting conditions. The investigator shall determine, in the area of the intended installation of the on-site wastewater treatment facility, where any of the following limiting conditions exist:
- a. The soil absorption rate determined under R18-9-A312(D)(2) is:
    - i. More than 1.20 gallons per square foot per day;
    - ii. Less than 0.20 gallons per square foot per day;
  - b. The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation specified in R18-9-A312(E);
  - c. Seasonal saturation occurs within surface soils above the seasonal high water table;
  - d. One of the following subsurface conditions within the minimum vertical separation distance specified in R18-9-A312(E) that may cause or contribute to the surfacing of wastewater:
    - i. An impervious soil or rock layer,
    - ii. A zone of saturation that substantially limits downward percolation from the disposal works,
    - iii. Soil with more than 35 percent rock fragments more than 3 inches across;
  - e. One of the following subsurface conditions within the minimum vertical separation distance specified in R18-9-A312(E) that promotes accelerated downward movement of insufficiently treated wastewater:
    - i. Fractures or joints in rock that are open, continuous or interconnected, and deep

- enough to conduct wastewater to the aquifer;
    - ii. Karst voids or channels; or
    - iii. Highly permeable materials such as deposits of cobbles or boulders that extend to the aquifer; or
    - f. A subsurface condition within the minimum vertical separation distance specified in R18-9-A312(E) that may convey wastewater to a water of the state and cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4.
  - 3. Applicability of subsurface characterization methods. The investigator shall:
    - a. For a seepage pit constructed under R18-9-E302, test seepage pit performance using the procedure specified in subsection (G);
    - b. For an on-site wastewater treatment facility other than a seepage pit, characterize soil by using one or more of the ASTM methods specified in subsection (D)(1)(a) if any of the following site conditions exists:
      - i. The natural surface slope at the intended location of the on-site wastewater treatment facility is greater than 15 percent;
      - ii. Bedrock or similar consolidated rock formation that cannot be excavated with a shovel outcrops on the property or occurs less than 12 feet below the land surface;
      - iii. The native soil at the surface or encountered in a boring, trench, or hole consists of more than 35 percent rock fragments that are more than 3 inches across;
      - iv. The seasonal high water table occurs within 12 feet of the natural land surface as encountered in trenches or borings, or evidenced by well records or hydrologic reports;
      - v. Seasonal saturation at the natural land surface occurs as indicated by soil mottling, vegetation adapted to near-surface saturated soils, or springs, seeps, or surface water near enough to the intended location of the on-site wastewater treatment facility to have a connection with potential seasonal saturation at the land surface; or
      - vi. A percolation test yields results outside the limits specified in subsections (D)(2)(a) and (b).
    - c. Percolation testing. The investigator may perform percolation testing as specified in subsection (F):
      - i. To augment another method of subsurface characterization if useful to locate or design an on-site wastewater treatment facility, or
      - ii. As the sole method of subsurface characterization if a subsurface characterization by an ASTM method is not required under subsection (D)(3)(b).
- E. If an ASTM method is used for subsurface characterization, the investigator shall:
  - 1. Select at least two test locations for characterization in the intended area of the on-site wastewater treatment facility to provide adequate and credible information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility;
  - 2. Perform the characterization at each test location at appropriate depths within the soil profile to establish the degree of soil absorption of wastewater and aid in determining the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the disposal works;
  - 3. Conduct testing at the site to yield credible and representative data relating to the location, selection, design, installation, or performance of the on-site wastewater treatment facility; and
  - 4. Submit with the site investigation report:
    - a. A log of soil formations for each test location with information on soil type, texture, and classification; and percentage of rock, structure, consistence, and mottles;
    - b. A determination of depth to groundwater below the land surface by test trenches or borings, published groundwater data, subdivision reports, or relevant well data; and
    - c. A determination of the water absorption characteristics of the soil, under R18-9-A312(D)(2)(b), sufficient to allow location and design of the on-site wastewater treatment facility.
- F. Percolation testing method for subsurface characterization.
  - 1. Planning and Preparation. The investigator shall:
    - a. Select as many test locations as necessary for percolation testing in the intended area of the on-site wastewater treatment facility, but no less than two, to provide adequate and credible

- information to ensure proper location, selection, design, and installation of a properly working on-site wastewater treatment facility;
- b. Perform percolation testing at each test location at appropriate depths within the soil profile to establish the capability of the soil to absorb wastewater and to aid in determining the vertical separation necessary to achieve effective wastewater treatment in the zone of unsaturated flow below the disposal works. The investigator shall perform percolation tests at multiple depths if there is an indication of an obvious change in soil characteristics that appreciably affect the location, selection, design, installation, or disposal performance of the on-site wastewater treatment facility. The bottom of the percolation test hole is the reference elevation and depth for recordkeeping;
  - c. Excavate percolation test holes in undisturbed soil at least 12 inches deep with dimensions of 12 inches by 12 inches, if square, or a diameter of 15 inches, if round. The investigator shall not alter the structure of the soil during the excavation;
  - d. Place percolation test holes away from site or soil features that yield unrepresentative or misleading data pertaining to the location, selection, design, installation, or performance of the on-site wastewater treatment facility;
  - e. Scarify smeared soil surfaces within the percolation test holes and remove any loosened materials from the bottom of the hole; and
  - f. Use buckets with holes in the sides to support the sidewalls of the percolation test hole, if necessary. The investigator shall fill any void between the walls of the hole and the bucket with pea gravel to reduce the impact of the enlarged hole.
2. Presoaking procedure. The investigator shall:
- a. Fill the percolation test hole with clean water to a depth of 12 inches above the bottom of the hole;
  - b. Observe the decline of the water level in the hole and record time in minutes for the water to completely drain away;
  - c. Repeat the steps specified in subsections (F)(2)(a) and (b) if the water drains away in less than 60 minutes.
    - i. If the water drains away the second time in less than 60 minutes, the inspector shall repeat the steps specified in subsections (F)(2)(a) and (b).
    - ii. If the water drains away again in less than 60 minutes, the investigator shall perform the percolation test following subsection (F)(3); and
  - d. Add clean water to the hole after 60 minutes and maintain the water at a minimum depth of 9 inches for at least four more hours if it takes 60 minutes or longer for the water to drain away. The inspector shall protect the hole from precipitation and runoff and perform the percolation test specified in subsection (F)(3) between 16 and 24 hours after presoaking.
3. Conducting the test. The investigator shall:
- a. Conduct the percolation test before soil hydraulic conditions established by the presoaking procedure substantially change. The investigator shall remove loose materials in the percolation test hole to ensure that the specified dimensions of the hole are maintained and the infiltration surfaces are undisturbed native soil;
  - b. Fill the test hole to a depth of 6 inches above the bottom with clean water;
  - c. Observe the decline of the water level in the test hole and record the time in minutes for the water level to fall exactly 1 inch from a fixed reference point. The investigator shall:
    - i. Immediately refill the hole with clean water to a depth of 6 inches above the bottom and determine and record the time in minutes for the water level to fall exactly 1 inch,
    - ii. Refill the hole again with clean water to a depth of 6 inches above the bottom and determine and record the time in minutes for the water level to fall exactly 1 inch, and
    - iii. Ensure that the method for measuring water level depth is accurate and does not significantly affect the percolation rate of the test hole;
  - d. If the percolation rate stabilizes for three consecutive measurements by varying no more than 10 percent, use a percolation rate that is calculated as the average of the three measurements. If three consecutive measurements indicate that the percolation rate results are not stabilizing or the percolation rate is between 60 and 120 minutes per inch, the investigator shall use an alternate method based on a graphical solution of the test data to approximate the stabilized percolation rate; and

- e. Record the percolation rate results in minutes per inch. When submitting the percolation test results to the Department the investigator shall include:
    - i. A log of the soil formations encountered;
    - ii. The percent of rock fragments;
    - iii. The texture, structure, consistence, mottles, and depth to groundwater;
    - iv. Whether and which test hole was reinforced with a bucket; and
    - v. The locations and depths or elevations of the percolation test holes on the site investigation map.
- G. Seepage pit performance testing method for subsurface characterization. The investigator shall test seepage pits described in R18-9-E302 as follows:
- 1. Planning and Preparation. The investigator shall:
    - a. Identify the disposal area at the site and drill a test hole at least 18 inches in diameter to the depth of the bottom of the proposed seepage pit, at least 30 feet deep, and
    - b. Scarify soil surfaces within the test hole and remove loosened materials from the bottom of the hole;
  - 2. Presoaking procedure. The investigator shall:
    - a. Fill the bottom 6 inches of the test hole with gravel, if necessary, to prevent scouring;
    - b. Fill the test hole with clean water up to 3 feet below the land surface;
    - c. Observe the decline of the water level in the hole and determine the time in hours and minutes for the water to completely drain away;
    - d. Repeat the procedure if the water drains away in less than four hours. If the water drains away the second time in less than four hours, the investigator shall conduct the seepage pit performance test following subsection (G)(3);
    - e. Add water to the hole and maintain the water at a depth that leaves at least the top 3 feet of hole exposed to air for at least four more hours if the water drains away in four or more hours; and
    - f. Not remove the water from the hole before the seepage pit performance test if there is standing water in the hole after at least 16 hours of presoaking;
  - 3. Conducting the test. The investigator shall:
    - a. Fill the test hole with clean water up to 3 feet below land surface;
    - b. Observe the decline of the water level in the hole and determine and record the vertical distance to the water level from a fixed reference point every 10 minutes. The investigator shall ensure that the method for measuring water level depth is accurate and does not significantly affect the rate of fall of the water level in the test hole;
    - c. Measure the decline of the water level continually until three consecutive 10-minute measurements indicate that the infiltration rates are within 10 percent. If measurements indicate that infiltration is not approaching a steady rate or if the rate is close to a numerical limit specified in R18-9-A312(E), the investigator shall use an alternate method based on a graphical solution of the test data to approximate the final stabilized infiltration rate;
    - d. Percolation test rate. Calculate the stabilized infiltration rate for a seepage pit determined by the test hole procedure specified in subsection (G)(1)(a) using the formula  $P = (15 / DS) \times IS$  to determine an equivalent percolation test rate. Once "P" is determined, the investigator shall use R18-9-A312(D)(2)(a) to establish the design SAR for wastewater treated under R18-9-E302 and to calculate the required minimum sidewall area for the seepage pit using the equation specified in R18-9-E302(C)(5)(k). The note at the bottom of the table is applicable to seepage pits.
      - i. "P" is the percolation test rate (minutes per inch) tabulated in the first column of the table in R18-9-A312(D)(2)(a),
      - ii. "DS" is the diameter of the seepage pit test hole in inches, and
      - iii. "IS" is the seepage pit stabilized infiltration rate (minutes per inch) determined by the procedure specified in R18-9-A310(F)(3)(c);
    - e. Submit the seepage pit performance test results to the Department, including:
      - i. Data, calculations, and findings on a form provided by the Department;
      - ii. The log of the test hole indicating lithologic characteristics and points of change; and
      - iii. The location of the test hole on the site investigation map;
    - f. Fill the test hole so that groundwater quality and public safety are not compromised if the

seepage pit is drilled elsewhere or if a seepage pit is not sited at the location because of unfavorable test results.

- H. Qualifications. A person shall not perform a site investigation under this Section unless the person has knowledge and competence in the subject area and is licensed in good standing or otherwise qualified in one of the following categories:
1. Arizona-registered professional engineer,
  2. Arizona-registered geologist,
  3. Arizona-registered sanitarian,
  4. A certificate of training from a course recognized by the Department as sufficiently covering the information specified in this Section, or
  5. Qualifies under another category designated in writing by the Department.

**R18-9-A311. Facility Selection ~~For~~ for Type 4 On-site Wastewater Treatment Facilities**

- A. ~~A person seeking to install an on-site wastewater treatment facility described in R18-9-E302 may install the facility if the site investigation conducted under R18-9-A310 indicates that none of the limiting site conditions described in R18-9-A310(B) exist at the site, except as provided in subsection (C).~~
- ~~1. A seepage pit may be installed only in valley fill sediments in a basin and range alluvial basin and only if the seepage pit performance test results meet the criteria specified in R18-9-A312(E).~~
  - ~~2. The Notice of Intent to Discharge shall specify that none of the limiting site conditions described in R18-9-A310(B) were identified at the site.~~
- B. ~~The on-site wastewater treatment facility for the site shall be selected, designed, and installed to overcome the identified site limitations.~~
- ~~1. On-site treatment and disposal systems and technologies covered by Type 4 General Permits may be used alone or in combination to overcome the site limitations.~~
  - ~~2. An applicant may submit a single Notice of Intent to Discharge for a system consisting of components or technologies covered by multiple general permits if the information submittal requirements of all the general permits are met.~~
  - ~~3. The Director shall, except in unusual circumstances, issue a single Provisional Verification of General Permit Conformance established under R18-9-A301(D)(2) for the on-site wastewater treatment facility.~~
- C. ~~A person seeking to install an on-site wastewater treatment facility shall select a facility that is appropriate for the site's geographic location, setback limitations, slope, topography, soil classification, wastewater infiltration capability, and depth to seasonally high groundwater table or other limiting subsurface condition. An on-site wastewater treatment facility described in R18-9-E302 shall not be used by itself at a site where limiting site conditions are identified, except the Department shall review and may approve a facility based on the procedures and conditions under R18-9-A312(G) if no more than one of the limiting site conditions specified by R18-9-A310(B)(1)(a), (B)(1)(b) or (B)(1)(d) exists.~~
- D. ~~If an on-site wastewater treatment facility, described in R18-9-E302, is suitable for a site and no limiting site conditions prevent its proper installation and operation, the Department shall not approve a system other than that described in R18-9-E302, unless the applicant supplies a statement with the Notice of Intent to Discharge justifying the use of a system not authorized under R18-9-E302.~~
- A. A person shall select, design, and install an on-site wastewater treatment facility that is appropriate for the site's geographic location, setback limitations, slope, topography, drainage and soil characteristics, wastewater infiltration capability, depth to the seasonal high water table, and any surface or subsurface limiting condition.
1. A person may use on-site treatment and disposal systems and technologies covered by a Type 4 General Permit alone or in combination with other Type 4 General Permits to overcome site limitations.
  2. An applicant may submit a single Notice of Intent to Discharge for an on-site wastewater treatment facility consisting of components or technologies covered by multiple general permits if the information submittal requirements of all the general permits are met.
  3. The Director shall issue a single Construction Authorization under R18-9-A301(D)(2) for an on-site wastewater treatment facility that consists of components or technologies covered by multiple general permits.
- B. A person may install a septic tank and disposal works system described in R18-9-E302 as the sole method of wastewater treatment and disposal at a site if the site investigation conducted under R18-9-A310 indicates

that no surface limiting condition identified under R18-9-A310(C) and no subsurface limiting condition identified under R18-9-A310(D) exists at the site.

1. A person may install a seepage pit only in valley-fill sediments in a basin-and-range alluvial basin, and only if the seepage pit performance test results meet the criteria specified in R18-9-A312(E).
2. The person shall specify in the Notice of Intent to Discharge that no limiting conditions described in R18-9-A310(C) and (D) were identified at the site.

C. If any surface or subsurface limiting condition is identified in the site investigation report, an applicant may propose installation of a septic tank and disposal works system described in R18-9-E302 only if:

1. The applicant submits a separate report under R18-9-A312(G) describing:
  - a. How the design of the septic tank and disposal works system specified in R18-9-E302 was modified to overcome limiting conditions.
  - b. How the modified design meets the criteria of R18-9-A312(G)(3), and
  - c. A site-specific SAR under R18-9-A312(D)(2)(a) or (b), as applicable; and
2. None of the following surface or subsurface limiting conditions are identified at the site:
  - a. An outcropping of rock that cannot be excavated or will impair the function of soil receiving the discharge exists in the intended location of the on-site wastewater treatment facility, as described in R18-9-A310(C)(2)(d);
  - b. The vertical separation distance from the bottom of the lowest point of the disposal works to the seasonal high water table is less than the minimum vertical separation distance, as described in R18-9-A310(D)(2)(c);
  - c. A subsurface condition that promotes accelerated downward movement of insufficiently treated wastewater as described in R18-9-A310(D)(2)(f).

D. If a site can accommodate a septic tank and disposal works system described in R18-9-E302 in conformance with this Article, the applicant shall install this system unless the applicant supplies a statement with the Notice of Intent to Discharge justifying the use of a system described in R18-9-E303 through R18-9-E322.

#### **R18-9-A312. Facility Design ~~For~~ for Type 4 On-site Wastewater Treatment Facilities**

- A. General design requirements. A person designing the on-site wastewater treatment facility shall:
  1. ~~Sign design documents submitted as part of the Notice of Intent to Discharge or subsequently to obtain a Provisional Verification of General Permit Conformance Construction Authorization, including plans, specifications, drawings, reports, and calculations; and~~
  2. ~~Locate and design the on-site wastewater treatment facility project using good design judgement judgement and rely on appropriate design methods and calculations.~~
- B. Design considerations and flow determination. A person designing the on-site wastewater treatment facility shall:
  1. Design the facility to satisfy a 20 year operational life;
  2. Design the facility based on design flow the provisions of:
    - a. ~~General Permits 4.02 through 4.22 apply only to R18-9-E302 through R18-9-E322 for facilities with a design flow of less than 3000 gallons per day, and~~
    - b. ~~General Permit 4.23 applies only to R18-9-E323 for facilities with a design flow of 3000 gallons per day to less than 24,000 gallons per day;~~
  3. ~~Use Table 1, Unit Daily Design Flows, to determine design flow;~~ Design the facility based on its design flow and wastewater characteristics for typical sewage or on the expected strength of the wastewater if the strength exceeds the level for typical sewage;
  4. ~~Apply the following design requirements to~~ For on-site wastewater treatment facilities permitted under R18-9-E303 through R18-9-E323, apply the following design requirements, as applicable:
    - a. Include the power source and power components in construction drawings if electricity or another type of power is necessary for facility operation;
    - b. Perform a linear loading rate analysis for subsurface wastewater flow if the site investigation indicates that an impermeable layer or seasonal high water table exists less than 10 feet below the bottom of the disposal works; Perform a hydraulic analyses of the performance of the subsurface disposal works at the design flow, if one of the subsurface conditions specified in R18-9-A310(D)(2)(d) exists, to ensure that treated wastewater will not surface. The analysis shall show dimensions and locations of the absorption surfaces in native soil and calculations of the downward and lateral wastewater flow through those absorption surfaces demonstrating that no wastewater will surface at the design flow and soil absorption rate;



- c. Design components, piping, ports, seals, and appurtenances to withstand installation loads, internal and external operational loads, and buoyant forces. ~~Ports shall be designed~~ Design ports for firmness of position resistance against movement, and cap or cover openings shall be capped or covered for protection from damage and vector entry;
  - d. Design tanks, liners, ports, seals, piping into and out of the facility, and appurtenances for watertightness under all operational conditions;
  - e. Provide adequate storage capacity above high operating level to:
    - i. Accommodate a 24-hour power or pump outage, and
    - ii. Contain wastewater that is incompletely treated or cannot be released by the disposal works to the native soil;
  - f. If a fixed media process is used, ~~include~~ provide in the construction drawings the media material, installation specification, ~~bed media~~ media configuration, and wastewater loading rate of the media at the daily design flow ~~in construction drawings~~;
  - g. Provide ~~a fail-safe~~ an auxiliary wastewater control mechanism or operational process, if required by the general permit, ~~for total containment of incompletely treated wastewater~~.
- C. Setbacks. The following setbacks apply unless Article 3, Part E of this Chapter establishes alternative setbacks, the Department ~~has authorized~~ approves a different setback under the procedure specified in subsection (G), or ~~has established~~ the Department establishes a more stringent setback on a site- or area-specific basis to ensure compliance with water quality standards.

Feature of Potential Impact	Setback Distance (feet)	
	Septic Tank	Disposal Trench, Bed, or Seepage Pit
Building (1)	10	10
Property line shared with adjoining land not served by a common drinking water system or an existing well (2)	50	50
All other property lines	5	5
Water supply well (public or private)	100	100
Perennial or intermittent stream (3)	100	100
Lake or reservoir (4)	100	100
Drinking water intake from a surface water source (includes an open water body, downgrade spring or a well tapping streamside saturated alluvium)	200	200
Drainage easement or wash with drainage area more than five acres (5)	50	50
Water main or branch water line	10	10
Domestic service water line (6)	5	5
Downslope cut banks and culvert or roadway ditches (7)	15	15
Driveway (8)	5	5
Swimming pool (9)	5	5
Easement (except drainage easement)	5	5

Notes:

- (1) ~~Includes porches, decks, and steps (covered or uncovered), breezeways, roofed patios, carports, covered walks and driveways, and similar structures and appurtenances.~~
- (2) ~~A common drinking water system is a system that currently serves or is under legal obligation to serve the property and may include a drinking water utility, a well sharing agreement, or other viable water supply agreement. A setback may be reduced to a minimum of five feet from the property line if:
 
  - a. ~~The owners of any affected undeveloped adjacent properties agree by an appropriate written document to limit the location of any new well on their property to at least 100 feet from the proposed septic tank and primary and reserve disposal field areas; and~~
  - b. ~~The arrangements and documentation are approved by the Department.~~~~
- (3) ~~Measured from the limit of peak streamflow from a 10-year, 24-hour rainfall event.~~
- (4) ~~Measured from the high water line from a 10-year, 24-hour rainfall event at the lake or reservoir.~~
- (5) ~~Measured from the nearest edge of the defined natural channel bank or drainage easement whichever is less. A setback may be reduced to 25 feet if natural or constructed erosion protection is approved by the appropriate flood plain administrator.~~
- (6) ~~The water line separation from sewer lines shall be as follows:
 
  - a. ~~A water line crossing a sewer line at an angle of 45 to 90 degrees shall be one foot above the sewer line.~~
  - b. ~~A water line crossing a sewer line at an angle of less than 45 degrees is not allowed.~~
  - c. ~~A water line that is one to three feet from a sewer line but does not cross the sewer line shall be one foot above the sewer line and may be on a bench in the same trench or in a separate trench.~~
  - d. ~~A water line that is less than one foot from a sewer line but does not cross the sewer line is not allowed.~~~~
- (7) ~~Measured to the top of the cut bank or ditch or to the nearest sidewall of the culvert. The setback to a disposal trench, bed, or seepage pit is 15 feet or four times the elevation difference between the finished grade of the disposal trench, bed, or seepage pit and the elevation at the cut bank bottom, ditch bottom, or culvert invert, whichever is greater, up to 50 feet.~~
- (8) ~~Measured to the nearest edge of septic tank excavation. A properly reinforced septic tank and cover may be placed at any location relative to a driveway if access openings, risers, and covers carry the design load and are protected from inflow.~~
- (9) ~~A setback may be increased due to soil loading and stability concerns.~~

<u>FEATURES REQUIRING SETBACKS</u>	<u>SETBACK DISTANCE FOR AN ON-SITE WASTEWATER TREATMENT FACILITY, INCLUDING A RESERVE AREA (In feet)</u>	<u>SPECIAL PROVISIONS</u>
1. <u>Building</u>	10	<u>Includes porches, decks, and steps (covered or uncovered), breezeways, roofed patios, carports, covered walks, and similar structures and appurtenances.</u>
2. <u>Property line shared with any adjoining lot or parcel not served by a common drinking water system* or an existing drinking water well</u>	50	<u>A person may reduce the separation distance to a minimum of 5 feet from the property line if:           <ul style="list-style-type: none"> <li>a. <u>The owners of any affected undeveloped adjacent properties agree by an appropriate written document to limit the location of any new well on their property to at least 100 feet from the proposed treatment works and primary and reserve disposal works; and</u></li> <li>b. <u>The arrangements and documentation are approved by the Department.</u></li> </ul> </u>

<u>3. All other property lines</u>	<u>5</u>	<u>None</u>
<u>4. Public or private water supply well.</u>	<u>100</u>	<u>None</u>
<u>5. Perennial or intermittent stream</u>	<u>100</u>	<u>Measured horizontally from the high water line of the peak streamflow from a 10-year, 24-hour rainfall event.</u>
<u>6. Lake, reservoir, or canal</u>	<u>100</u>	<u>Measured horizontally from the high water line from a 10-year, 24-hour rainfall event at the lake or reservoir.</u>
<u>7. Drinking water intake from a surface water source (includes an open water body, downslope spring or a well tapping streamside saturated alluvium)</u>	<u>200</u>	<u>Measured horizontally from the on-site wastewater treatment facility to the structure or mechanism for withdrawing raw water such as a pipe inlet, grate, pump, intake or diversion box, spring box, well, or similar structure.</u>
<u>8. Wash with drainage area of more than 20 acres or a drainage easement</u>	<u>50</u>	<u>Measured horizontally from the nearest edge of the defined natural channel bank or drainage easement boundary. A person may reduce a the separation distance to 25 feet if natural or constructed erosion protection is approved by the appropriate flood plain administrator.</u>
<u>9. Water main or branch water line</u>	<u>10</u>	<u>None</u>
<u>10. Domestic service water line</u>	<u>5</u>	<u>Measured horizontally between the water line and the wastewater pipe, except that the following are allowed:</u> <u>a. A water line may cross above a wastewater pipe if the crossing angle is between 45 and 90 degrees and the vertical separation distance is 1 foot or more.</u> <u>b. A water line may parallel a wastewater pipe with a horizontal separation distance of 1 foot to 5 feet if the bottom of the water line is 1 foot or more above the top of the wastewater pipe and is in a separate trench or on a bench in the same trench.</u>
<u>11. Downslopes greater than 15 percent, culverts, and ditches.</u>		
<u>a. Treatment works components</u>	<u>10</u>	<u>Measured horizontally from the bottom of the treatment works component to the closest point of daylighting on the surface.</u>
<u>b. Trench, bed, chamber technology, or gravelless trench with:</u>	<u>20</u>	<u>Measured horizontally from the bottom of the lowest point of the disposal pipe or drip lines, as applicable, to the closest point of daylighting on the surface.</u>
<u>i. No limiting subsurface condition specified in R18-9-A310(D)(2).</u>	<u>50</u>	<u>Measured horizontally from the bottom of the lowest point of the disposal pipe or drip lines, as applicable, to the closest point of daylighting on the surface.</u>
<u>ii. A limiting subsurface condition.</u>		
<u>c. Subsurface drip lines.</u>	<u>3</u>	<u>Measured horizontally from the bottom of the lowest point of the disposal pipe or drip lines, as applicable, to the closest point of daylighting on the surface.</u>

<u>12. Driveway</u>	<u>5</u>	<u>Measured horizontally to the nearest edge of an on-site wastewater treatment facility excavation. A person may place a properly reinforced and protected wastewater treatment facility, except for disposal works, at any location relative to a driveway if access openings, risers, and covers carry the design load and are protected from inflow.</u>
<u>13. Swimming pool excavation</u>	<u>5</u>	<u>Except if soil loading or stability concerns indicate the need for a greater separation distance.</u>
<u>14. Easement (except drainage easement)</u>	<u>5</u>	<u>None</u>
<u>15. Earth fissures</u>	<u>100</u>	<u>None</u>

\* A “common drinking water system” means a system that currently serves or is under legal obligation to serve the property and may include a drinking water utility, a well sharing agreement, or other viable water supply agreement.

D. Soil absorption rate (SAR) and disposal field works sizing.

1. A person designing the subsurface disposal works shall determine the soil absorption area by dividing the design flow by the applicable soil absorption rate. If soil characterization and percolation test methods yield different SAR values or if multiple applications of the same approach yield different values, the designer of the disposal field shall use the ~~most conservative value unless a less conservative value~~ lowest SAR value unless a higher SAR value is proposed and justified to the Department’s satisfaction in the Notice of Intent to Discharge.
2. The ~~maximum~~ SAR used to calculate disposal field size for systems described in R18-9-E302 is as follows:
  - a. The SAR by percolation testing as described in ~~R18-9-A310(E)(3)~~ R18-9-A310(F) for ~~shallow and deep disposal fields~~ is determined from the results of percolation tests as follows:

<b>Percolation Rate from Percolation Test (minutes per inch)</b>	<b>SAR, Shallow Trench, Disposal Field Chamber, and Pit (gal/day/ft<sup>2</sup>)</b>	<b>SAR, Deep Bed Disposal Field (gal/day/ft<sup>2</sup>)</b>
Less than 1.00	See Note <u>A site-specific SAR is required</u>	See Note <u>A site-specific SAR is required</u>
1.00 to less than 3.00	1.20	0.93
3.00	1.10	0.73
4.00	1.00	0.67
5.00	0.90	0.60
7.00	0.75	0.50
10.0	0.63	0.42
15.0	0.50	0.33
20.0	0.44	0.29
25.0	0.40	0.27
30.0	0.36	0.24
35.0	0.33	0.22
40.0	0.31	0.21
45.0	0.29	0.20
50.0	0.28	0.19
55.0	0.27	0.18
55.0+ to 60.0	0.25	0.17

60.0+ to 120	0.20	0.13
Greater than 120	See Note A site-specific SAR is required	See Note A site-specific SAR is required

Note: ~~A disposal field described in R18-9-E302 is not allowed unless approved by the Department under R18-9-A311(C).~~

- b. The ~~maximum SAR for shallow and deep disposal fields~~ using the soil evaluation method described in ~~R18-9-A310(G)~~ R18-9-A310(E) is determined by answering the questions in the following table. The questions are read in sequence starting with “A.” The first “yes” answer determines the ~~maximum SAR used to calculate disposal field size for systems described in R18-9-E302.~~

Sequence of Soil Characteristics Questions	SAR, <u>Trench, Chamber, and Pit</u> <del>Shallow Disposal Field System</del> (gallons per day per square foot)	SAR, <u>Bed</u> <del>Deep Disposal Field System</del> (gallons per day per square foot)
A. Is the horizon gravelly coarse sand or coarser?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
B. Is the structure of the horizon moderate or strongly platy?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
C. Is the texture of the horizon sandy clay loam, clay loam, silty clay loam, or finer and the soil structure weak platy?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
D. Is the moist consistency stronger than firm or any cemented class?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
E. Is the texture sandy clay, clay, or silty clay of high clay content and the structure massive or weak?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
F. Is the texture sandy clay loam, clay loam, silty clay loam, or silty loam and the structure massive?	See Note A site-specific SAR is required	See Note A site-specific SAR is required
G. Is the texture of the horizon loam or sandy loam and the structure massive?	0.20	0.13
H. Is the texture sandy clay, clay or silty clay of low clay content and the structure moderate or strong?	0.20	0.13
I. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure weak?	0.20	0.13
J. Is the texture sandy clay loam, clay loam, or silty clay loam and the structure moderate or strong?	0.40	0.27
K. Is the texture sandy loam, loam, or silty loam and the structure weak?	0.40	0.27
L. Is the texture sandy loam, <u>loam, or</u> silt loam and the structure moderate or strong?	0.60	0.40
M. Is the texture fine sand, very fine sand, loamy fine sand, or loamy very fine sand?	0.40	0.27
N. Is the texture loamy sand or sand?	0.80	0.53

O. Is the texture coarse sand?	1.20	See Note A site-specific SAR is required
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Note: A disposal field described in R18-9-E302 is not allowed, unless approved by the Department under R18-9-A311(C) and an applicable SAR is provided.

- c. For subsections (D)(2)(a) and (D)(2)(b), a shallow disposal field has a maximum depth below finished grade of five feet or less and a deep disposal field has a depth below finished grade of more than five feet.
3. For an on-site wastewater treatment facilities facility described in a general permit other than R18-9-E302, the SAR is dependent on the ability of the facility to reduce the level of TSS and BOD<sub>5</sub> and is calculated using the following formula:

$$SAR_a = \left[ \left( \frac{6.15}{\sqrt[3]{TSS + BOD_5}} - 1.01 \right) SAR^{1.28} + 1 \right] SAR$$

$$SAR_a = \left[ \left( \frac{11.39}{\sqrt[3]{TSS + BOD_5}} - 1.87 \right) SAR^{1.13} + 1 \right] SAR$$

- a. "SAR<sub>a</sub>" is the adjusted soil absorption rate for disposal field design in gallons per day per square foot,
- b. "TSS" is the total suspended solids in wastewater delivered to the disposal field in milligrams per liter,
- c. "BOD<sub>5</sub>" is the five-day biochemical oxygen demand of wastewater delivered to the disposal field in milligrams per liter, and
- d. "SAR" is the soil absorption rate for septic tank wastewater determined by the ~~percolation test or soil evaluation procedure~~ subsurface characterization method described in R18-9-A310.
4. ~~A person designing the facility shall ensure that the on-site wastewater treatment facility has a reserve disposal field with an area equivalent to at least 100% of the original disposal field determined by subsections (D)(1) through (D)(3) to allow installation of a reserve field if the original disposal field cannot absorb all of the wastewater. A person shall not impair the usefulness of the reserve area by division of the property, construction of structures, or improvements on the property.~~  
A person designing the facility shall ensure that the area of the intended installation is large enough to allow for construction of the facility and future replacement or repair and is at least as large as the following:
- a. For a dwelling, a primary area for the disposal works sized according to subsection (D)(1) and a contiguous reserve area of 25 percent of the primary area, exclusive of the footprint of the treatment works, except that the reserve area is not required for a lot in a subdivision approved before 1974 provided the lot conforms to its original approved configuration.
- b. For other than a dwelling, a primary area for the disposal works sized according to subsection (D)(1) and an equal-sized reserve area, exclusive of the footprint of the treatment works.
5. A person designing the subsurface disposal works shall ensure that the disposal works achieves the design flow established in R18-9-A309(B)(3), through proper hydraulic function, including conditions of seasonally cold and wet weather.

E. Minimum vertical separation.

1. The minimum vertical separation from the bottom of the lowest point of the disposal system to the top of the nearest limiting subsurface condition described in R18-9-A310 (B)(1)(c), (B)(1)(f), and (B)(1)(h) for on-site wastewater treatment facilities described in R18-9-E302, is dependent on the soil absorption rate and is determined as follows: For a septic tank and disposal works system described in R18-9-E302, the minimum vertical separation distance in acceptable soil between the lowest point in the disposal works to the seasonal high water table is dependent on the soil absorption rate and is determined as follows:

MAXIMUM SOIL ABSORPTION RATE (gallons per day per square foot)			MINIMUM VERTICAL SEPARATION (feet)	
Shallow Disposal Field Trench and Chamber	Deep Disposal Field Bed	Seepage Pit	Shallow or Deep Disposal Field Trench, Chamber, and Bed	Seepage Pit
1.20+	0.93+	1.20+	Not allowed for septic tank effluent	Not Allowed
0.63+ to 1.20	0.42 to 0.93	0.63+ to 1.20	10	60
0.20 to 0.63	0.13 to 0.42	0.36 to 0.63	5	25
Less than 0.20	Less than 0.13	Less than 0.36	Not allowed for septic tank effluent	Not Allowed

2. The allowable minimum vertical separation from the bottom of the constructed disposal field to the top of the nearest indicated limiting subsurface condition is dependent on the ability of the facility to reduce the level of harmful microorganisms, expressed as total coliform in colony forming units per 100 milliliters (cfu/100 ml) delivered to native soil below the disposal works at least 95% of the time. A treatment works, disposal works, or a combination of these works that achieves a treatment level specified in the following table may be used to determine the corresponding minimum vertical separation: If the minimum vertical separation distance specified in subsection (E)(1) is not met for a septic tank and disposal works system described in R18-9-E302, the applicant shall propose treatment works, disposal works, or a combination of these works to reduce the level of harmful microorganisms, expressed as total coliform in colony forming units per 100 milliliters (cfu/100 ml), delivered to the native soil at the bottom of the disposal works. The applicant shall use the following table to select the works that achieve the reduction in total coliform concentration corresponding to the vertical separation distance between the lowest point in the disposal works and the seasonal high water table:

Total Coliform Concentration, 95th Percentile, Delivered to Natural Soil by the Disposal System (Log <sub>10</sub> of coliform concentration in cfu per 100 milliliters)	Minimum Vertical Separation (feet)	
	For SAR*, 0.20 to 0.63	For SAR*, 0.63+ to 1.20
8**	5	10
7	4	8
6	3.5	7
5	3	6
4	2.5	5
3	2	4
2	1.5	3
1	1	2
0***	0	0

\* Soil absorption rate from percolation testing or soil characterization, in gallons per square foot per day.

\*\* Nominal value for a standard septic tank and disposal field (10<sup>8</sup> colony forming

units per 100 ml).

\*\*\* Nominally free of coliform bacteria.

3. ~~To determine the minimum vertical separation, the nearest limiting subsurface condition means a property of the soil or a zone in the subsurface that critically restricts or critically and adversely accelerates downward percolation of wastewater. Limiting subsurface conditions may include, but are not limited to, the seasonal high water table capillary fringe, a substantially impermeable layer of soil or rock, fractured rock, or soil with greater than 50% rock fragments. The applicant shall ensure that the design for an on-site wastewater treatment facility provides a zone of unsaturated flow beneath the disposal works equal in distance to the minimum vertical separation requirements specified in subsection (E)(2). If a subsurface limiting condition listed in R18-9-A310(D)(2) exists within the minimum vertical separation distance specified in the column titled "Trench, Chamber, and Bed" in subsection (E)(1), the applicant shall follow the requirements of R18-9-A311 to select the appropriate treatment and disposal works to address the limiting condition.~~
- F. Materials and manufactured system components.
1. ~~Materials. If no materials specifications are required under this Article, aggregate may be used in disposal trenches or for other uses in an on-site wastewater treatment facility. If no specification for disposal works material is provided in this Article, the person shall use aggregate.~~
  2. Manufactured components. If manufactured components are used, a person shall design, install, and operate the on-site wastewater treatment facility following the manufacturer's specifications. The person shall ensure that:
    - ~~a. If manufactured components are used, the on-site wastewater treatment facility shall be designed, installed and operated following the manufacturer's specifications. The process described in subsection (G) shall be used to propose any deviation that is less stringent than the manufacturer's specifications.~~
    - b.a. Treatment and containment components, mechanical equipment, instrumentation, and controls ~~shall~~ have monitoring, inspection, access and cleanout ports or covers, as appropriate, for monitoring and service.;
    - ~~e.b.~~ Treatment and containment components, pipe, fittings, pumps, and related components and controls ~~shall be~~ are durable, watertight, structurally sound, and capable of withstanding stress from installation and operational service.;
    - ~~d.c.~~ Distribution lines for disposal ~~fields shall be~~ works are constructed of clay tile laid with open joints, perforated clay pipe, perforated high density polyethylene pipe, perforated ABS pipe, or perforated PVC pipe if the pipe is suitable for wastewater disposal use and sufficient openings are available for distribution of the wastewater into the trench or bed area.
  3. ~~Electronics~~ Electronic components. When electronic components are used, the person shall ensure that:
    - a. Instructions and a wiring diagram ~~shall be~~ are mounted on the inside of a control panel cover.;
    - b. The control panel ~~shall be~~ is equipped with a multimode operation switch, red alarm light, buzzer, and reset button.;
    - c. The multimode operation switch ~~shall operate~~ operates in the automatic position for normal system operation.;
    - d. An anomalous condition ~~shall be~~ is indicated by a glowing alarm light and sounding buzzer. The continued glowing of the alarm light after pressing the reset button shall signal the need for maintenance or repair of the system at the earliest practical opportunity.
  4. If a conflict exists between this Article and the manufacturer's specifications, the requirements of this Article apply. If the conflict voids a manufacturer's warranty, the applicant shall submit a request under subsection (G) justifying use of the manufacturer's specifications, excluding a change to the SAR determined in subsection (D) and vertical separation requirements specified in subsection (E).
- G. Alternative design, setback, installation, or operational features. When a person submits a Notice of Intent to Discharge, the person may request that the Department review and approve a feature of improved or alternative technology, design, setback, installation, or operation that differs from a general permit requirement in this Article.
1. The person shall make the request for an alternative feature of technology, design, setback, installation, or operation on a form provided by the Department and include:
    - a. A description of the requested change;



- b. A citation to the applicable design, setback, installation, or operational requirement for which the change is being requested; and
  - c. Justification for the requested change, including any necessary supporting documentation.
2. The person shall submit the appropriate fee specified under 18 A.A.C. 14 for each requested change. For calculating the fee, a requested change that is applied multiple times in a similar manner throughout the facility is considered a single request if submitted for concurrent review.
3. The person shall provide sufficient information for the Department to determine that the change achieves equal or better performance compared with the general permit requirement, or addresses site or system conditions more satisfactorily than the requirements of this Article.
4. The Department shall review and may approve the request for change.
5. The Department shall deny the request for the change if the change adversely affects other permittees or causes or contributes to a violation of an Aquifer Water Quality Standard.
6. The Department shall deny the request for the change if the change:
  - a. Fails to achieve equal or better performance compared to the general permit requirement;
  - b. Fails to address site or system conditions more satisfactorily than the general permit requirement;
  - c. Is insufficiently justified based on the information provided in the submittal;
  - d. Requires excessive review time, research, or specialized expertise by the Department to act on the request; or
  - e. For any other justifiable cause.
7. The Department may approve a smaller setback for a facility authorized to discharge under R18-9-E303 through R18-9-E322, either separately or in combination with a septic tank system authorized under R18-9-E302, provided the applicant demonstrates that:
  - a. The treatment performance is significantly better than that provided under R18-9-E302(B),
  - b. The wastewater loading rate is reduced, or
  - c. Surface or subsurface characteristics ensure that reduced setbacks are protective of human health or water quality.
8. The Director shall use the procedures in this subsection if an applicant requests under R18-9-E301(D)(1)(e) a 4.01 General Permit for a sewage collection system.

**R18-9-A313. Facility Installation, Operation, and Maintenance ~~Plan For~~ for On-site Wastewater Treatment Facilities**

- A. Facility installation. In addition to installation requirements in the general permit, the applicant shall ensure that the following tasks are performed, as applicable:
  1. The facility is installed as described in design documents submitted with the Notice of Intent to Discharge;
  2. Components are installed on a firm foundation that supports the components and operating loads;
  3. The site is prepared to protect native soil beneath the soil absorption area and in adjacent areas from compaction, prevent smeared absorption surfaces, minimize disturbances from grubbing, and otherwise preclude damage to the disposal area that would impair performance;
  4. Components are protected from damage at the construction site and installed in conformance with the manufacturer's instructions if consistent with this Article;
  5. Treatment media is placed to achieve uniform density, prevent differential settling, produce a level inlet surface unless otherwise specified, and avoid introduction of construction contaminants;
  6. Backfill is placed to prevent damage to geotextile, liner materials, tanks, and other components;
  7. Soil cover is shaped to shed rainfall away from the backfill areas and prevent ponding of runoff; and
  8. Anti-buoyancy measures are implemented during construction if temporary saturated backfill conditions are anticipated during construction.
- B. Operation and maintenance. In addition to operation and maintenance requirements in the general permit or specified in the ~~Operation and Maintenance Plan~~ final operation and maintenance plan, the permittee shall perform the following tasks as applicable:
  1. Inspect Pump accumulated residues, inspect and clean pretreatment and wastewater treatment and distribution components, and manage residues to protect human health and the environment;
  2. Clean, or backwash, or replace any effluent filters, and return cleaning water to the pretreatment headworks according to the manufacturer's instructions, and manage residues to protect human health and the environment;

3. Inspect and clean the effluent baffle screen and pump tank, and properly dispose of cleaning residue;
4. Clean the dosing tank effluent screen, pump switches, and floats, and properly dispose of cleaning residue;
5. Flush lateral lines and return flush water to the pretreatment headworks;
6. Inspect, remove and replace, if necessary, and properly dispose of filter media;
7. Rod pressurized wastewater delivery lines and secondary distribution lines (for dosing systems), and return cleaning water to the pretreatment headworks;
8. Inspect and clean pump inlets and controls and return cleaning water to the pretreatment headworks;
9. Implement corrective measures if anomalous ponding, dryness, noise, odor, or differential settling is observed; ~~and~~
10. Inspect and monitor inspection and access ports, as applicable, to verify that operation and maintenance is within expected limits for:
  - a. Influent wastewater quality;
  - b. ~~Pressurized~~ The pressurized dosing system ~~operation~~;
  - c. ~~Aggregate~~ The aggregate infiltration bed and mound system ~~operation and performance~~;
  - d. Wastewater delivery and the engineered pad ~~operation and performance~~;
  - e. ~~Pressurized~~ The pressurized delivery system, filter, underdrain, and native soil absorption system ~~operation and performance~~;
  - f. Saturation condition status, ~~operation and performance~~ in peat and other media; and
  - g. Treatment system components ~~;~~
11. Inspect tanks, liners, ports, seals, piping, and appurtenances for watertightness under all operational conditions;
12. Manage vegetation on areas that contain components subject to physical impairment or damage due to root invasion or animals;
13. Maintain drainage, berms, protective barriers, cover materials, and other features; and
14. Maintain the usefulness of the reserve area to allow for repair or replacement of the on-site wastewater treatment facility.

**R18-9-A314. Septic Tank Design, Manufacturing, and Installation ~~For~~ for On-site Wastewater Treatment Facilities**

- A. A septic tanks manufacturer shall assure that septic tanks approved for installation under this Article are:
1. Designed to produce a clarified effluent and provide adequate space for sludge and scum accumulations;
  2. Watertight and constructed of solid durable materials not subject to excessive corrosion or decay;
  3. Manufactured with at least two compartments unless two separate structures are placed in series. The manufacturer shall ensure that:
    - a. The inlet compartment of any septic tank not placed in series is nominally ~~67% percent~~ 67% percent to ~~75% percent~~ 75% percent of the total required capacity of the tank,
    - b. Septic tanks placed in series are considered a unit and meet the same criteria as a single tank,
    - c. The liquid depth of the septic tank is at least 42 inches,
    - d. A septic tank of 1000 gallon capacity is at least ~~eight~~ 8 feet long and the tank length of septic tanks of greater capacity is at least two times but not more than three times the width~~;~~
  4. ~~Provided~~ Manufactured with at least two access openings to the tank interior, each at least 20 inches in diameter. The manufacturer shall ensure that:
    - a. One access opening is located over the inlet end of the tank and one access opening is located over the outlet end;
    - b. Whenever a first compartment exceeds 12 feet in length, another access opening is provided over the baffle wall;
    - c. Access openings and risers are constructed to ensure accessibility within ~~six~~ 6 inches below finished grade~~;~~
  5. Manufactured so that the sewage inlet and wastewater outlet openings are not less in size than the connecting sewer pipe. The manufacturer shall ensure that:
    - a. The vertical leg of round inlet and outlet fittings is at least ~~four~~ 4 inches but not less in size than the connecting sewer pipe,
    - b. A baffle fitting has the equivalent cross-sectional area of the connecting sewer pipe and not less than a ~~four~~ 4 inch horizontal dimension if measured at the inlet and outlet pipe inverts~~;~~

6. Manufactured so that the inlet and outlet pipe or baffle extends ~~four~~ 4 inches above and at least 12 inches below the water surface when the tank is installed according to the manufacturer's instructions consistent with this Chapter. The invert of the inlet pipe ~~shall be~~ is at least ~~two~~ 2 inches above the invert of the outlet pipe;
  7. Manufactured so that the inlet and outlet fittings or baffles and compartment partitions have a free vent area equal to the required cross-sectional area of the connected sewer pipe to provide free ventilation above the water surface from the disposal field or seepage pit through the septic tank, house sewer, and stack to the outer air;
  8. Manufactured so that the ~~side walls extend~~ open space extends at least ~~12~~ 9 inches above the liquid ~~depth level~~ and the cover of the septic tank is at least ~~two~~ 2 inches above the top of the inlet fitting vent opening;
  9. Manufactured so that partitions or baffles between compartments are of solid durable material (wooden baffles are prohibited) and extend at least ~~four~~ 4 inches above the liquid level. The manufacturer shall ensure that the open area of the baffle is between one and two times the open area of the inlet pipe or horizontal slot and located at the midpoint of the liquid level of the baffle. If a horizontal slot is used, the manufacture shall ensure that the slot ~~shall be~~ is no more than ~~six~~ 6 inches in height;
  10. Structurally designed to withstand all anticipated earth or other loads. The manufacturer shall ensure that:
    - a. All septic tank covers are capable of supporting an earth load of 300 pounds per square foot;
    - b. If the top of the tank is greater than ~~two~~ 2 feet below finish grade, the septic tank and cover are capable of supporting an additional load of 150 pounds per square foot for each additional foot of cover;
  11. Manufactured or installed so that the influent and effluent ends of the tank are clearly and permanently marked on the outside of the tank with the words "INLET" or "IN," and "OUTLET" or "OUT," above or to the right or left of the corresponding openings; and
  12. Clearly and permanently marked with the manufacturer's name or registered trademark, or both, the month and year of manufacture, the maximum recommended depth of earth cover in feet, and the design liquid capacity of the tank. The manufacturer shall protect the markings from corrosion so that they remain permanent and readable for the ~~usable~~ operational life of the tank.
- B. Materials used to construct or manufacture septic tanks.
1. A person constructing a concrete septic tank cast-in-place at the site of use shall protect the tank from corrosion by coating the tank with a bituminous coating, constructing the tank using a concrete mix that incorporates 15% ~~percent~~ to 18% ~~percent~~ fly ash, or other Department-approved means. The manufacturer shall ensure that:
    - a. The coating extends at least ~~four~~ 4 inches below the wastewater line and covers all of the internal area above that point;
    - b. A septic tank cast-in-place complies with the "Building Code Requirements for Structural Concrete (~~ACI 318-99~~ ACI 318-02) and Commentary (~~ACI 318R-99~~ ACI 318R-02)," ~~published by the American Concrete Institute, June 1999;~~ and the "Code Requirements for Environmental Engineering Concrete Structures and Commentary (~~ACI 350R-89~~ ACI 350/350R-01)," published by the American Concrete Institute, ~~January 2000~~. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State,~~ or may be obtained from American Concrete Institute, P.O. Box 9094, Farmington Hills, MI 48333-9094.
  2. A septic tank manufacturer shall ensure that a steel septic tank has a minimum wall thickness of No. 12 U.S. gauge steel and is protected from corrosion, internally and externally, by a bituminous coating or other Department-approved means.
  3. A septic tank manufacturer shall ensure that a prefabricated concrete septic tank complies with the "Standard Specification for Precast Concrete Septic Tanks," published by the American Society for Testing and Materials, (C-1227-00), approved January 10, 2000. This information is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of~~

State, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959.

4. A septic tank manufacturer shall ensure that materials for fiberglass or polyethylene septic tanks comply with the "Material and Property Standards for Prefabricated Septic Tanks," (IAPMO PS 1-2000), published by the International Association of Plumbing and Mechanical Officials, (~~IAPMO PS 1-99, revised January 1999~~). This information is incorporated by reference, does not include any later amendments or editions of the incorporated ~~matter, material and is on file with the Office of the Secretary of State. The material~~ may be viewed at the Arizona Department of Environmental, 1110 W. Washington, Phoenix, AZ 85007, Water Quality Division, or obtained from International Association of Plumbing & Mechanical Officials, 20001 E. Walnut Drive, South, Walnut, CA 91789-2825.
- C. If any conflict exists between this Article and the information incorporated by reference in subsections (B)(3) and ~~(B)(4)~~ (4), the requirements of this Article apply. The Department may approve ~~septic tanks constructed~~ use of alternative construction materials under R18-9-A312(G). Tanks constructed of wood, block, or bare steel are prohibited. The Department may inspect septic tanks at the site of manufacturing to verify compliance with subsections (A) through (C).
- D. ~~An applicant~~ A person designing an on-site wastewater treatment facility shall select a septic tank with a design liquid capacity ~~as follows~~ and shall determine its daily design flow as follows:
1. For a ~~single residence, the dwelling~~,
    - a. ~~The design liquid capacity of a septic tank is governed by the following table and its daily design flow are determined based on the number of bedrooms and fixture count as follows:~~

<b>No. of Bedrooms</b>	<b>No. of Occupants</b>	<b>No. of Baths</b>	<b>Maximum Fixture Count</b>	<b>Minimum Septic Tank Size (gallons)</b>
<u>2</u>	4	1-2	18	1000
<u>3</u>	6	1-2	18	1000
<u>4</u>	8	2-3	25	1250
<u>5</u>	10	2-4	32	1500
<u>6</u>	12	3-5	39	2000
<u>7</u>	14	3-5	42	2000

<b><u>Number of Bedrooms</u></b>	<b><u>Fixture Count</u></b>	<b><u>Minimum Septic Tank Size (gallons)</u></b>	<b><u>Daily Design Flow (gallons per day)</u></b>
<u>1-2</u>	<u>14 or less</u>	<u>1000</u>	<u>300</u>
	<u>More than 14</u>	<u>1000</u>	<u>450</u>
<u>2-3</u>	<u>21 or less</u>	<u>1000</u>	<u>450</u>
	<u>More than 21</u>	<u>1250</u>	<u>600</u>
<u>4</u>	<u>28 or less</u>	<u>1250</u>	<u>600</u>
	<u>More than 28</u>	<u>1500</u>	<u>750</u>
<u>5</u>	<u>35 or less</u>	<u>1500</u>	<u>750</u>
	<u>More than 35</u>	<u>2000</u>	<u>900</u>
<u>6</u>	<u>42 or less</u>	<u>2000</u>	<u>900</u>
	<u>More than 42</u>	<u>2500</u>	<u>1050</u>

7	49 or less	2500	1050
	More than 49	3000	1200
8	56 or less	3000	1200
	More than 56	3000	1350

Note: The daily design flow may be adjusted where the system accommodates flows other than those listed by fixture count in subsection (D)(1)(b).

b. Fixture count is determined as follows:

<u>Residential Fixture Type</u>	<u>Fixture Units</u>	<u>Residential Fixture Type</u>	<u>Fixture Units</u>
<u>Bathtub</u>	<u>2</u>	<u>Sink, bar</u>	<u>1</u>
<u>Bidet</u>	<u>2</u>	<u>Sink, kitchen (with or without dishwasher)</u>	<u>2</u>
<u>Clothes washer (with or without laundry tub)</u>	<u>2</u>	<u>Sink, service</u>	<u>3</u>
<u>Dishwasher, service</u>	<u>2</u>	<u>Utility tub or sink separate from clothes washer</u>	<u>2</u>
<u>Lavatory, single</u>	<u>1</u>	<u>Water closet, 1.6 gallons per flush (gpf)</u>	<u>3</u>
<u>Lavatory, double in master bedroom</u>	<u>1</u>	<u>Water closet, &gt;1.6 to 3.2 gpf</u>	<u>4</u>
<u>Shower, single stall</u>	<u>2</u>	<u>Water closet, greater than 3.2 gpf</u>	<u>6</u>

2. For other than a ~~single residence dwelling~~, the ~~recommended~~ design liquid capacity of a septic tank in gallons is 2.1 times the design flow into the tank as determined from ~~Table 1, Unit Daily Design Flows~~ Table 1, Unit Daily Design Flows. ~~If the wastewater strength exceeds that of typical sewage, additional tank volume is required.~~
  3. An applicant may place two septic tanks in series to meet the septic tank design liquid capacity requirements if the capacity of the first tank is between 67 percent to 75 percent of the total required tank capacity and the capacity of the second tank is at least 33 percent of the total required tank capacity.
- E. ~~New or replacement septic tank installation. An applicant~~ A person installing a septic tank shall ensure that:
1. ~~Provide permanent~~ Permanent surface markers for locating the septic tank access openings are provided for maintenance;
  2. ~~Ensure that septic tanks~~ A septic tank installed under concrete or pavement ~~have~~ has the required access openings extended to grade;
  3. ~~Install a~~ A septic tank effluent filter is installed on ~~all the septic tanks~~ the tank. ~~The applicant shall ensure that the filter:~~
    - a. ~~Prevents~~ The filter prevents the passage of solids larger than 1/8 inch in diameter while under ~~two~~ 2 feet of hydrostatic head; and
    - b. ~~Is~~ is constructed of materials that are resistant to corrosion and erosion and sized to accommodate hydraulic and organic loading; and
  4. ~~Test cast in place septic tanks and multi-part septic tanks assembled and sealed at the site of use~~ The septic tank is tested for watertightness after installation by ~~the a~~ a water test ~~or the vacuum test and repair repaired or replaced, if necessary.~~
    - a. Water test.

- i. The ~~applicant person~~ shall ensure that the septic tank is filled with clean water to the invert of the outlet and the water left standing in the tank for 24 hours. The ~~applicant person~~ shall:
  - i. ~~(1)~~ After 24 hours, refill the tank to the invert, if necessary;
  - ii. ~~(2)~~ Record the initial water level and time; and
  - iii. ~~(3)~~ After one hour, record the water level and time.
- b. ~~ii-~~ The tank passes the water test if the water level dropped less than 1/4 inch over the one-hour period. Any visible leak of flowing water is considered a failure. A damp or wet spot that is not flowing is not considered a failure.
- ~~b. Vacuum test.~~
  - ~~i. The applicant shall:~~
    - ~~(1) Seal the empty tank,~~
    - ~~(2) Apply and stabilize a vacuum of two inches of mercury, and~~
    - ~~(3) Monitor the vacuum for one hour.~~
  - ~~ii. The tank passes the vacuum test if the mercury level dropped no more than 0.2 inches over the one hour period.~~

**R18-9-A315. Interceptor Design, Manufacturing, and Installation ~~For~~ for On-site Wastewater Treatment Facilities**

- A. Interceptor requirement. An applicant shall ensure that an interceptor as required by R18-9-A309(A)(8)(c) or necessary due to excessive amounts of grease, garbage, sand, or other wastes in the sewage is installed between the sewage source and the on-site wastewater treatment facility.
- B. Interceptor design. An applicant shall ensure that:
  - 1. An interceptor has not less than two compartments with fittings designed for grease retention and capable of removing excessive amounts of grease, garbage, sand, or other wastes. Applicable structural and materials requirements prescribed in R18-9-A314 apply;
  - 2. Interceptors are located as close to the source as possible and are accessible for servicing. The applicant shall ensure that access openings for servicing are at grade level and gas-tight;
  - 3. The ~~applicant shall calculate~~ interceptor size for grease and garbage from non-residential kitchens ~~by~~ is calculated using the following equation: Interceptor Size (in gallons) =  $M \times F \times T \times S$ .
    - a. "M" is the number of meals per peak hour.
    - b. "F" is the waste flow rate from ~~Table 1, Unit Daily Design Flows~~ Table 1, Unit Daily Design Flows.
    - c. "T" is the estimated retention time:
      - i. Commercial kitchen waste, dishwasher or disposal: 2.5 hours;
      - ii. Single service kitchen with utensil wash disposal: 1.5 hours;
    - d. "S" is the estimated storage factor:
      - i. Fully equipped commercial kitchen, 8-hour operation: 1.0;
      - ii. Fully equipped commercial kitchen, 16-hour operation: 2.0;
      - iii. Fully equipped commercial kitchen, 24-hour operation: 3.0;
      - iv. Single service kitchen: 1.5; and
  - 4. The ~~applicant shall calculate~~ interceptor size for silt and grease from laundries and laundromats ~~by~~ is calculated using the following equation: Interceptor Size (in gallons) =  $M \times C \times F \times T \times S$ .
    - a. "M" is the number of machines;
    - b. "C" is the machine cycles per hour (assume 2);
    - c. "F" is the waste flow rate from ~~Table 1, Unit Daily Design Flows~~ Table 1, Unit Daily Design Flows;
    - d. "T" is the estimated retention time (assume 2), and
    - e. "S" is the estimated storage factor (assume 1.5 that allows for rock filter).
- ~~C. 5-~~ The applicant may calculate the size of an interceptor using different factor values than those given in subsections ~~(B)(4) and (B)(5)~~ (B)(3) and (4) based on the values justified by the applicant in the Notice of Intent to Discharge submitted to the Department for the on-site wastewater treatment facility.
- ~~D. 6-~~ The Department may require installation of a sampling box if the volume or characteristics of the waste will impair the performance of the on-site wastewater treatment facility.

**R18-9-A316. Transfer of Ownership Inspection For for On-site Wastewater Treatment Facilities**

- A. A person in good standing in one of the following categories possessing working knowledge of the type of facility and the inspection process shall perform a transfer of ownership inspection of an on-site wastewater treatment facility:
1. An Arizona-registered engineer.
  2. An Arizona-registered sanitarian.
  3. A wastewater treatment plant operator certified under 18 A.A.C 5, Article 1.
  4. A certificate of training from a course recognized by the Department as sufficiently covering the information specified in this Section, or
  5. A person qualifying under another category designated by the Department.
- B. ~~The applicant~~ transferee of the property shall send the Report of Inspection and Notice of Transfer ~~forms~~ required by R18-9-A304 and on forms approved by the Department, and ~~any applicable~~ the fee specified in A.A.C. R18-14-102(C)(7)(c), to the health or environmental agency delegated by the Director to administer the on-site wastewater treatment facility program within 15 days after the date ownership changes.
1. The Report of Inspection shall:
    - a. Indicate that the on-site wastewater treatment facility was inspected within ~~six~~ nine months before the deed of transfer for the property was recorded, ~~and~~
    - b. Address the physical and operational condition of the on-site wastewater treatment facility and ~~identify associated~~ describe observed deficiencies; and
    - c. Indicate that any septic tank or other wastewater treatment container on the property was pumped or otherwise serviced to remove, to the maximum extent possible, solid, floating, and liquid waste accumulations when the transfer inspection was performed, or that pumping or servicing was not performed for one of the following reasons:
      - i. Pumping or servicing was performed less than three years before the transfer inspection;
      - ii. The on-site wastewater treatment facility was placed into service less than three years before the transfer inspection;
      - iii. Pumping or servicing was not necessary at the time of the transfer inspection based on written operation and maintenance instructions from the manufacturer; or
      - iv. No septic tank or other wastewater treatment containers could be found after reasonable search of the property.
  2. ~~A copy of~~ The transferor shall provide the Report of Inspection shall be transmitted and all records required to be maintained under R18-9-A309(F) to the buyer of the property transferee before title transfer.
- C. ~~This Section does not apply to the first sale of a house or property from a developer or subdivider to the buyer of the property. If a property has not been previously occupied, the transferor shall comply with the requirements of subsection (B), except that the inspection is not required.~~
- D. ~~Conformance with this Section satisfies the Notice of Transfer requirements under R18-9-A304.~~

**R18-9-A317. Nitrogen Management Area.**

- A. ~~The Director may designate a new Nitrogen Management Area, modify the boundaries of or requirements applicable to a Nitrogen Management Area, or rescind designation of a Nitrogen Management Area.~~
1. The Director shall consider areas for designation as a Nitrogen Management Area based on whether existing conditions or trends in nitrogen loading to an aquifer will cause or contribute to an exceedance of the Aquifer Water Quality Standard for nitrate at a point or points of current or reasonably foreseeable use of the aquifer.
  2. The Director shall use the following criteria when considering whether to designate a Nitrogen Management Area:
    - a. Population of the area;
    - b. The degree to which the area is unsewered;
    - c. Gross areal nitrogen loading, calculated as the amount of nitrogen discharged into the subsurface by use of on-site wastewater treatment facilities, divided by the land area under consideration for designation as a Nitrogen Management Area;
    - d. Population growth rate of area;
    - e. Existing contamination of groundwater by nitrogen species;
    - f. Existing and potential impact to groundwater by sources of nitrogen other than on-site

- wastewater treatment facilities;
    - g. Characteristics of the vadose zone and aquifer;
    - h. Location, number, and density of distribution of existing and potential sources of nitrogen;
    - i. Location and characteristics of existing and potential drinking water supplies; and
    - j. Any other information relevant to determining the severity of actual or potential nitrogen impact on the aquifer.
  - 3. The Director may modify the boundaries of, or requirements applicable to, a Nitrogen Management Area or rescind a Nitrogen Management Area based on either of the following:
    - a. A material change to one or more criterion specified in subsection (A)(2); or
    - b. The adoption by a local agency of a master plan to substantially sewer the area as soon as possible, but with a completion deadline not to exceed 10 years.
- B. Preliminary designation.
  - 1. The Director shall provide a report to the mayors and members of the Board of Supervisors of all towns, cities, and counties and to the presidents of all sanitary districts within the proposed Nitrogen Management Area, discussing each criterion specified in subsection (A)(2)
  - 2. Any town, city, county, or sanitary district receiving the Director's report may provide written comments to the Department within 90 days to dispute the factual information presented in the report and supply any information supporting the comments.
  - 3. The Director shall evaluate the comments and supporting information and either designate the Nitrogen Management Area or withdraw the proposal.
- C. Final designation.
  - 1. If the Director designates the Nitrogen Management Area, the Department shall:
    - a. Issue the Nitrogen Management Area designation and any special provisions established for the area to control groundwater pollution by sources of nitrogen;
    - b. Maintain the designation and a map showing the boundaries of the Nitrogen Management Area at the Arizona Department of Environmental Quality, 1110 West Washington, Phoenix, Arizona 85007 and on the Department's website at: [www.adeq.state.az.us](http://www.adeq.state.az.us); and
    - c. Provide, upon request, a copy of the Nitrogen Management Area designation and a map of the area;
  - 2. If the Director withdraws the Nitrogen Management Area designation, the Director shall issue a determination stating the decision and post it on the website at [www.adeq.state.az.us](http://www.adeq.state.az.us);
  - 3. Any town, city, or county may appeal, under A.R.S. Title 41, Article 10, the Director's decision, provided the town, city, or county is affected by the determination and submitted comments on the preliminary designation.
- D. Nitrogen Management Area requirements.
  - 1. The Department shall issue a Construction Authorization, under R18-9-A301(D)(1)(c), for an on-site wastewater treatment facility only if the applicant proposes, in the Notice of Intent to Discharge, to employ one or more of the technologies allowed under the 4.02 through 4.22 General Permits that achieve the performance level for removal of total nitrogen of 15 mg/l.
  - 2. Agricultural operations shall use the best control measure necessary to reduce nitrogen discharge when implementing the best management practices developed under 18 A.A.C. 9, Article 4.
  - 3. A person shall comply with any special provision established for the Nitrogen Management Area.

## **PART B. TYPE 1 GENERAL PERMITS**

### **R18-9-B301. Type 1 General Permit**

- A. A 1.01 General Permit allows any discharge of wash water from a sand and gravel operation, placer mining operation, or other similar activity, including construction, foundation, and underground dewatering, if only physical processes are employed and only hazardous substances at naturally occurring concentrations in the sand, gravel, or other rock material are present in the discharge.
- B. A 1.02 General Permit allows any discharge from hydrostatic tests of a drinking water distribution system and pipelines not previously used, if all the following conditions are met:
  - 1. The quality of the water used for the test does not ~~violate any~~ exceed an Aquifer Water Quality Standard or for non-drinking water pipelines, if reclaimed water is used it meets Class A+ under A.A.C. R18-11-303 or Class B+ Reclaimed Water Quality Standards under R18-11-305;
  - 2. The discharge is not to waters of the United States, unless the discharge is under a ~~National Pollution~~



- ~~Discharge Elimination System~~ NPDES or AZPDES permit; and
3. The test site is restored to its natural grade.
- C. A 1.03 General Permit allows any discharge from hydrostatic tests of a pipeline, tank, or appurtenance previously used for transmission of fluid, ~~other than those previously used for drinking water distribution systems,~~ if all the following conditions are met:
1. All liquid discharge is contained in an impoundment lined with flexible geomembrane material with a thickness of at least 10 mils; All liquid discharge generated from the hydrostatic test is contained in an impoundment lined with a flexible geomembrane. The liquid is evaporated or removed from the impoundment and taken to a treatment works or landfill authorized to accept the material within:
    - a. 60 days of the hydrostatic test if the liner is 10 mils, or
    - b. 180 days of the hydrostatic test if the liner is 30 mils or greater;
  2. The liner ~~material~~ is placed over a layer, at least ~~three~~ 3 inches thick, of well-sorted sand or finer grained material, or over an underliner ~~determined by the Department to provide that provides~~ protection equal to or better than sand or finer grained material and the calculated seepage is less than 550 gallons per acre per day;
  3. ~~Within 60 days after the end of a hydrostatic test, all test waters are evaporated or removed from the impoundment and taken to a treatment works or landfill approved under 18 A.A.C. 8 to accept the material. Any other methods for removal of the test waters shall be approved in advance by the Department;~~
  4. ~~3.~~ The liner is removed and disposed of at an approved landfill unless the liner can be reused at another test location without a reduction in integrity; and
  5. ~~4.~~ The test site is restored to its natural grade;:
  5. ~~The permittee obtains approval, in advance, from the Department if the discharge is authorized under a NPDES or AZPDES permit.~~
- D. A 1.04 General Permit allows any discharge from a facility that, for water quality sampling, hydrologic parameter testing, well development, redevelopment, or potable water system maintenance and repair purposes, receives water, drilling fluids, or drill cuttings from a well if the discharge is to the same aquifer in approximately the same location from which the water supply was originally withdrawn, or the discharge is under a ~~National Pollution Discharge Elimination System~~ AZPDES permit, or both.
- E. A 1.05 General Permit allows a discharge to an injection well, surface impoundment, and leach line, and a navigable water under an AZPDES permit to receive a ~~only if the discharge only of is to a filter backwash from a potable water treatment system, condensate from a refrigeration unit, overflows from an evaporative cooler, heat exchange system return water, or swimming pool filter backwash if~~ and the discharge is less than 1000 gallons per day.
- F. A 1.06 General Permit allows the burial of mining industry off-road motor vehicle waste tires at the mine site in a manner consistent with the cover requirements in ~~R18-8-703~~ R18-13-1203.
- G. A 1.07 General Permit allows the operation of dockside facilities and watercraft if the following conditions are met:
1. Docks that service watercraft equipped with toilets provide sanitary facilities at dockside for the disposal of sewage from watercraft toilets. No wastewater from sinks, showers, laundries, baths, or other plumbing fixtures at a dockside facility is discharged into waters of the state;
  2. Docks that service watercraft have conveniently located, toilet facilities for men and women;
  3. No boat, houseboat, or other type of watercraft is equipped with a ~~marine~~ toilet constructed and operated to discharge sewage directly or indirectly into waters of the state, nor is any container of sewage placed, left, discharged, or caused to be placed, left, or discharged in or near any water of the state by a person;
  4. Watercraft with marine toilets constructed to allow sewage to be discharged directly into waters of the state are locked and sealed to prevent usage. Chemical or other type marine toilets with approved storage containers are permitted if dockside disposal facilities are provided; and
  5. No bilge water or wastewater from sinks, showers, laundries, baths, or other plumbing fixtures on houseboats or other watercraft is discharged into waters of the state.
- H. A 1.08 General Permit allows for any earth pit privy, fixed or transportable chemical toilet, incinerator toilet or privy, or pail or can type privy ~~authorized if allowed~~ by a county health or environmental department under A.R.S. Title 36 or a delegation agreement under A.R.S. § 49-107.
- I. A 1.09 General Permit allows:
1. ~~for a~~ A sewage treatment facility or an on-site system with flows less than 20,000 gallons per day

- operating under a general permit and approved by the Department before January 1, 2001, and
- ~~2.~~ An on-site wastewater treatment facility with flows less than 20,000 gallons per day operating before January 1, 2001
  3. The person who owns or operates ~~the permitted a~~ a facility under subsections (I)(1) or (2) shall does not:
    - ~~1-~~ a. Cause or contribute to a violation of a water quality standard;
    - ~~2-~~ b. ~~Expand the facility to accommodate increased flows,~~ Increase the design flow;
    - ~~3-~~ c. Treat flows that are not typical sewage;
    4. e. Treat flows from commercial operations using hazardous substances or creating hazardous wastes, as defined in A.R.S. § 49-921(5); ~~or~~
    - ~~5-~~ d. Create any environmental nuisance condition listed in A.R.S. § 49-141; or
    - e. Alter the treatment or disposal characteristics of the original facility, except as allowed under R18-9-A309(A)(9).
- ~~J.~~ A 1.10 General Permit allows the operation of a sewage collection system, installed before January 1, 2001, that serves downstream from the point where the diameter of the sewer line pipe increases from less than 8 inches to 8 inches or more, or that includes a manhole, or force main or small diameter sewer serving more than one dwelling, if:
1. The system complies with the performance standards in R18-9-E301(B),
  2. No sewage is released from the sewage collection system to the land surface, and
  3. The system is not operating under a 2.05 General Permit.
- ~~K.~~ A 1.11 General Permit allows the operation of a sewage collection system that serves from the building drains downstream to the point where the diameter of the sewer line pipe increases from less than 8 inches to 8 inches or more, if all of the following are met:
1. The system does not cause or contribute to an exceedance of a water quality standard established in 18 A.A.C. 11, Articles 1 and 4;
  2. No sewage is released from the sewage collection system to the land surface;
  3. No environmental nuisance condition listed in A.R.S. § 49-141 is created;
  4. The system does not include a manhole, or a force main or small diameter sewer serving more than one dwelling;
  5. The system is not constructed within a public right-of-way or easement;
  6. Applicable local administrative requirements for review and approval of design and construction are followed;
  7. The performance standards specified in R18-9-E301(B) are met using:
    - i. Local building and construction codes,
    - ii. Relevant design and construction standards specified in R18-9-E301, and
    - ii. Appropriate operation and maintenance;
  8. The system flows directly into one of the following downstream facilities:
    - a. An on-site wastewater treatment facility;
    - b. A sewage treatment facility operating under an individual permit; or
    - c. A sewage collection system operating under a 1.10, 2.05, or 4.01 General Permit;
  9. The system is not operating under a 2.05 General Permit.

### PART C. TYPE 2 GENERAL PERMITS

#### **R18-9-C301. 2.01 General Permit: Drywells That Drain Areas Where Hazardous Substances Are Used, Stored, Loaded, or Treated**

- A. A 2.01 General Permit allows for a drywell that drains an area where hazardous substances are used, stored, loaded, or treated.
- B. Notice of Intent to Discharge. In addition to the requirements in R18-9-A301(B), an applicant shall submit:
  1. The Department registration number for the drywell or documentation that a drywell registration form was submitted to the Department;
  2. For a drywell constructed ~~before January 1, 2001,~~ more than 90 days before submitting the Notice of Intent to the Department, a certification signed, dated, and sealed by an Arizona-registered professional engineer or geologist that a site investigation has concluded that the manhole cover or surface grate is marked "Stormwater Only," and either of the following:
    - a. Analytical results from sampling ~~of the~~ drywell settling chamber sediment for pollutants

- reasonably expected to be present do not exceed the residential soil remediation levels ~~or~~ and groundwater protection levels, or
- b. ~~Soil borings or groundwater investigations indicate that an Aquifer Water Quality Standard in groundwater beneath the drywell has not been exceeded. Soil borings indicate that:~~
- i. ~~The settling chamber does not contain sediment for characterizing and comparison of results to soil remediation levels and the chamber has not been cleaned out within the last six months; or~~
  - ii. ~~Neither a soil remediation level nor groundwater protection level is exceeded in soil samples collected from a boring drilled within 5 feet of the drywell and sampled in 5 foot increments starting from 5 feet below ground surface and extending to 10 feet below the base of the drywell injection pipe, or~~
  - iii. ~~If coarse grained lithology prevents the collection of representative soil samples in a soil boring, then a groundwater investigation demonstrates compliance with Aquifer Water Quality Standards in groundwater at the applicable point of compliance unless the exceedance of a soil remediation level, groundwater protection level or Aquifer Water Quality Standard is addressed at the facility under corrective actions or remedial actions that are exempt under A.R.S. § 49-250(B)(18).~~
3. ~~An applicant shall provide design information to demonstrate that the requirements in subsection (C) are met.~~
3. ~~A copy of the Best Management Practices Plan described in subsection (D)(5).~~
- C. Design requirements. An applicant shall:
1. Locate the drywell no closer than 100 feet from a water supply well and 20 feet from an underground storage tank;
  2. Clearly mark the drywell “~~Storm Water~~ Stormwater Only” on the surface grate or manhole cover;
  3. Locate the bottom of the drywell hole at least 10 feet above ~~the groundwater table. The applicant shall seal off any zone of perched water above the groundwater table from the drywell following the requirements established under 12 A.A.C. 15, Article 8; and~~ If during drilling and well installation the drywell borehole encounters saturated conditions, then the borehole shall be backfilled with cement grout to at least 10 feet above the elevation of saturated conditions prior to construction of the drywell in the borehole;
  4. Ensure that the drywell design includes a flow control or pretreatment device, such as an interceptor, sump, or another device or structure designed to remove, intercept, or collect pollutants. The following flow control and pretreatment devices are considered pre-approved by the Department if the permittee follows all the requirements established in this Section and the applicable requirements in R18-9-C304(D)(1) or (2):
    - a. Normally closed manual or automatic valves;
    - b. A drywell inlet raised within the retention basin;
    - c. Magnetic mat or cap;
    - d. Primary sump, interceptor, or settling chamber;
    - e. Combined settling chamber and oil/water separator;
    - f. Combined settling chamber, oil/water separator, and a means of filtration and absorption;
    - g. Passive skimmer; and
    - h. Catch basin inlet filter;
  5. A permit applicant may request Department approval of an alternative technology or combination of technologies not identified in subsection (C)(4) and provide engineering plans with a demonstration that the system will remove, intercept, or collect pollutants prior to discharge to the drywell injection pipe;
  6. Measure the latitude and longitude of the drywell location using a Global Positioning System (GPS) or site survey and record the location on the site plan maintained under subsection (E);
  7. Develop and maintain a current site plan showing the accurate location of the drywell and the latitude and longitude coordinates of the drywell location, surface drainage patterns, and the location of floor drains and French drains plumbed to the drywell, water supply wells, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas; and
  8. Prepare design plans showing the details of drywell design and drainage design and depicting the technologies used in subsection (C)(4) or alternative technologies described in subsection (C)(5) installed to remove, intercept, and collect pollutants.

- D. Operational and inspection requirements. An applicant shall:
1. ~~A permittee shall operate~~ Operate the drywell only for the disposal of ~~storm water~~ stormwater. The permittee shall not release industrial process waters or wastes in the drywell or drywell retention basin drainage area;
  2. ~~The permittee shall implement a Best Management Practices Plan for operation of the drywell and control of detrimental practices in the drywell drainage area.~~
  3. ~~The permittee shall keep the Best Management Practices Plan on-site or at the closest practical place of work and provide the plan to the Department upon request.~~
  4. ~~The permittee may substitute any Spill Prevention Containment and Control Plan, facility response plan, or a under a National Pollutant Discharge Elimination System Storm Water Pollution Prevention Plan that meets the requirements of this subsection for a Best Management Practices Plan.~~
  5. ~~The Best Management Practices Plan shall include:~~
    - a. ~~A site plan showing surface drainage patterns and the location of floor drains, water supply, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas. The site plan shall show surface grading details designed to prevent drainage and spills of hazardous substances from leaving the drainage area and entering the drywell;~~
    - b. ~~A design plan showing details of drywell design and drainage design, including flow control or pretreatment devices, such as interceptors, sumps, and other devices and structures designed to remove, intercept, and collect pollutants;~~
    - c. ~~Procedures to prevent and contain spills and minimize discharges to the drywell;~~
    - d. ~~Operational practices that include routine inspection and maintenance of the drywell, periodic inspection of waste storage facilities, and proper handling of hazardous substances to prevent discharges to the drywell; and~~
    - e. ~~Procedures for periodic employee training on practices required by the Best Management Practices Plan.~~
  2. Implement waste management practices to prohibit and prevent unauthorized discharges, other than those listed in A.R.S. § 49-250(B)(23), in the drywell drainage area, including:
    - a. Maintaining an up-to-date inventory of generated wastes and waste products;
    - b. Disposing or recycling all wastes or solvents through companies licensed to handle those materials;
    - c. Collecting and storing waste in waste receptacles located outside the drywell drainage area;
    - d. Using licensed waste haulers to transport waste off-site to a permitted waste disposal facility; and
    - e. Retaining waste manifests and characterization data and providing copies to the Department upon request;
  3. Replace the adsorbent material in skimmers, if installed, when the adsorbent capacity is reached;
  4. Maintain valves and associated piping for drywell injection and treatment systems;
  5. Maintain magnetic caps and mats, if installed;
  6. Remove sludge from the oil/water separator if installed and replace the filtration or adsorption materials to maintain treatment capacity;
  7. Remove sediment from the catch basin inlet filters and retention basin to maintain required storage capacity;
  8. Provide new employee training within one month of hire and annual employee training on how to maintain and operate flow control and pretreatment technology used in the drywell and on waste management practices in subsection (D)(2);
  9. Conduct an annual inspection of the drywell for sediment accumulation in the chambers, and in flow control and treatment systems and remove sediment annually or when 25 percent of the effective capacity is filled, whichever comes first, to restore capacity and ensure that the drywell functions properly. The permittee shall characterize the sediments that are removed from the drywell after inspection and dispose of the waste according to local, state, and federal requirements; and
  10. If the stormwater fails to drain through the drywell within 36 hours, inspect the treatment system and piping to ensure that it is functioning properly and make repairs and perform maintenance as needed to restore proper function;
- E. Recordkeeping. A permittee shall maintain a log book as part of the Best Management Practices Plan that documents drywell maintenance, inspections, employee training, and sampling activities. A permittee shall

maintain a drywell log book and drywell records for at least 10 years. The permittee shall keep the log book and records at the facility or at the closest practical place of work, and make the documents available to the Department upon request. The logbook shall include:

1. Documentation of drywell maintenance, inspections, employee training, and sampling activities;
2. A site plan showing the accurate location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns and the location of floor drains, water supply wells, monitor wells, underground storage tanks, and places where motor fuel and hazardous substances are used, stored, or loaded;
3. A design plan showing details of drywell design and drainage design, including one or a combination of the pre-approved flow control and pretreatment technologies;
4. An operations and maintenance manual that includes:
  - a. Procedures to prevent and contain spills and minimize discharges to the drywell and a list of actions and specific methods that will be used for motor fuel and hazardous substance spills or leaks;
  - b. Methods and procedures for inspection and operation and maintenance activities;
  - c. Procedures for spill response; and
  - d. A description of the employee training program for drywell operations, inspections, maintenance, and waste management practices;
5. Drywell sediment waste characteristics and disposal manifest records for sediments removed during routine inspections and maintenance activities; and
6. Sampling plans and certified laboratory reports and chain of custody forms for soil, sediment, and groundwater sampling associated with drywell site investigations.

F. ~~Spills. The permittee shall notify the Department within 24 hours of any spill of hazardous substances exceeding the applicable reportable quantity established under 40 CFR 302.4, "Designation of Hazardous Substances," and 40 CFR 302.5, "Determination of Reportable Quantities," July 1, 1999 Edition, into the drywell or of any spill of petroleum products exceeding 25 gallons into the drywell. These regulations are incorporated by reference and do not include any later amendments or editions of the incorporated matter. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality and the Office of the Secretary of State.~~

1. In the event of a spill, the permittee shall:
  - a. Notify the Department within 24 hours of any spill of motor fuel, or hazardous or toxic substance that enters into the drywell or exceeds the treatment capacity of the pretreatment system;
  - b. Contain, clean up, and dispose of, according to local, state, and federal requirements, any spill or leak of motor fuel and hazardous substance in the drywell drainage area and basin drainage area; and
  - c. If the spill reaches the drywell injection pipe, drill a soil boring within 5 feet of the drywell inlet chamber and sample soil in 5-foot increments from 5 feet below ground surface to a depth extending at least 10 feet below the base of the injection pipe to determine whether a soil remediation level or groundwater protection level has been exceeded in the subsurface. The permittee shall submit the results to the Department within 60 days of the date of the spill. The report shall notify the Department if the facility is under an existing approved corrective action plan or remedial action plan as defined in A.R.S. § 49-250(B)(18).
2. Based on the results of subsection (F)(1)(c), the Director may require additional investigations or corrective actions for spills at facilities not operating under an approved corrective action plan.
  - a. The Director shall notify the permittee if a corrective action plan, subject to the hourly rate fee under R18-13-102(B), is required.
  - b. Within 90 days of the Director's written notification, the permittee shall submit the corrective action plan. The corrective action plan shall:
    - i. Define lateral and vertical extent of contamination. If contamination extends to groundwater or to coarse grained lithology that extends to groundwater the permittee shall notify the Department in writing within five days of becoming aware of the contamination;
    - ii. Define the area of soil concentrations exceeding the soil remediation levels and groundwater protection levels;
    - iii. Determine the depth to groundwater beneath the facility; and

- iv. Describe the steps that will be taken to address soil contamination that exceeds soil remediation levels or groundwater protection levels to achieve clean closure;
  - v. Provide a schedule for implementing the plan to achieve clean closure;
  - c. The permittee shall submit a report to the Director verifying that the correction actions have been implemented;
  - d. If the report demonstrates that the corrective actions returned the facility to compliance with Aquifer Water Quality Standards at the point of compliance, the Director shall notify the permittee that permittee may continue operation under this general permit.
- G. Closure and decommissioning requirements. A permittee shall comply with the following closure requirements:
- 1. A permittee shall:
    - ~~1-~~ a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;
    - ~~2-~~ b. Remove sediments and any drainage components, such as stand pipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;
    - ~~3-~~ c. Remove the top of the drywell, including the upper settling chamber to a depth of at least 6 feet below the ground surface. The permittee may use a backhoe or other excavation equipment; and
    - 4. d. Fill the remaining settling chamber with clean, mechanically compacted silt, clay, similar engineered material, or ABC slurry;
      - e. If the settling chamber is not removed, place a cement plug at least 2 feet thick and no deeper than 4 feet below ground surface;
      - f. Backfill the remainder of the drywell to the land surface with clean silt, clay, or engineered material. Materials containing hazardous substances are prohibited from use in backfilling the drywell; and
      - g. Mechanically compact the backfill;
  - 2. Within 30 days of decommissioning and closure, the permittee shall submit written verification to the Department that the closure has removed all material that contributed to a continued discharge and the permittee has eliminated to the greatest degree practical any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance. . The written verification shall specify:
    - a. The reason for the closure;
    - b. the drywell registration number;
    - c. The general permit reference number;
    - d. The materials and methods used to abandon the drywell;
    - e. The name of the contractor who performed the closure;
    - f. The completion date;
    - g. Any sampling data; and
    - g. Sump construction details, if a sump was constructed to replace the abandoned drywell;
    - h. Any other information necessary to verify that closure has been achieved.

**R18-9-C302. 2.02 General Permit: Intermediate Stockpiles at Mining Sites**

- A. A 2.02 General Permit allows for intermediate stockpiles not qualifying as inert under A.R.S. § 49-201(19) at a mining site.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge under R18-9-A301(B), an applicant shall submit the construction and operation specifications used to satisfy the requirements in subsection (C)(1)
- C. Design and operational requirements.
  - 1. An applicant shall design, construct, and operate the stockpile so that it does not impound water. An applicant may rely on ~~storm water~~ stormwater run-on controls or facility design features, such as drains, or both.
  - 2. An applicant shall direct storm runoff contacting the stockpile to a mine pit or a facility covered by an individual or general permit.
  - 3. A permittee shall maintain any engineered feature ~~designed to aid compliance with the permit of the facility~~ in good working condition.
  - 4. A permittee shall visually inspect the ~~features described in subsection (C)(1) facility~~ at least quarterly and repair any defect as soon as practical. Any defects noted during the inspection shall be repaired

~~as soon as practical.~~

5. A permittee shall not add hazardous substances to the stockpiled material.
- D. Closure requirements. In addition to the closure requirements in R18-9-A306, the following apply:
1. If an intermediate stockpile covered under this general permit is permanently closed, a permittee shall remove any remaining material, to the greatest extent practical, and regrade the area to prevent impoundment of water.
  2. The permittee shall submit a narrative description of closure measures to the Department within 30 days after closure.

**R18-9-C303. 2.03 General Permit: Hydrologic Tracer Studies**

- A. A 2.03 General Permit allows for a discharge caused by the performance of tracer studies.
1. This permit does not authorize the use of any hazardous substance, radioactive material, or any substance identified in A.R.S. § 49-243(I) in any tracer study.
  2. A permittee shall complete a single tracer test ~~shall be completed~~ within two years of the Notice of Intent to Discharge.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. A narrative description of the tracer test including the type and amount of tracer used;
  2. A Material Safety Data Sheet for the tracer; and
  3. Unless the injection or distribution is within the capture zone of an established passive containment system meeting the requirements of A.R.S. § 49-243(G), the following information:
    - a. A narrative description of the impacts that may occur if a solution migrates outside the test area, including a list of downgradient users, if any;
    - b. The anticipated effects and expected concentrations, if possible to calculate; and
    - c. A description of the monitoring, including types of tests and frequency.
- C. Design and operational requirements. A permittee shall:
1. Ensure that injection into wells inside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) does not exceed the total depth of the influence of the hydrologic sink;
  2. Ensure that injection into wells outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) does not exceed rock fracture pressures during injection of the tracer;
  3. Not add substances to wells that are not compatible with their construction;
  4. Ensure that a tracer is compatible with the construction materials at the impoundment if a tracer is placed or collected in an existing impoundment;
  5. Monitor any wells hydraulically downgradient of the test site for the tracer, quarterly, for at least two years ~~on a quarterly basis~~ if a tracer is used outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G) and less than 85% percent of the tracer is recovered. ~~This~~ The permittee may adjust this ~~period may be adjusted~~ with the consent of the Department if the ~~applicant~~ permittee can show that the hydraulic gradient causes the tracer to reach the monitoring point in a shorter or longer period of time;
  6. Ensure that a tracer does not leave the site in concentrations distinguishable from background water quality; and
  7. Monitor the amount of tracer used and recovered and submit a report summarizing the test and results to the Department within 30 calendar days of test completion.
- D. Recordkeeping. A permittee shall retain the following information at the site where the facility is located for at least three years after test completion and make it available to the Department upon request.
1. Test protocols,
  2. Material Safety Data Sheet information,
  3. Recovery records, and
  4. A copy of the report submitted to the Department under subsection (C)(7).
- E. Closure requirements. In addition to the closure requirements in R18-9-A306, the following apply:
1. If a tracer was used outside the capture zone of an established passive containment system that meets the requirements of A.R.S. § 49-243(G), a permittee shall account for any tracer not recovered through attenuation, modeling, or monitoring.
  2. Closure may occur immediately following the test, or if the test area is within a pollutant

management area defined in an individual permit, at the conclusion of operations.

**R18-9-C304. 2.04 General Permit: Drywells that Drain Areas at Motor Fuel Dispensing Facilities Where Motor Fuels Are Used, Stored, or Loaded**

- A. A 2.04 General Permit allows for a drywell that drains an area at a facility for dispensing motor fuel, as defined in A.A.C. R20-2-701(19), including a commercial gasoline station with an underground storage tank.
1. A drywell at a motor fuel dispensing facility using hazardous substances is eligible for coverage under this general permit.
  2. A drywell at a vehicle maintenance facility owned or operated by a commercial enterprise or by a federal, state, county, or local government is not eligible for coverage under this general permit, unless the facility design ensures that only motor fuel dispensing areas will drain to the drywell. Areas where hazardous substances other than motor fuels are used, stored, or loaded, including service bays, are not covered under this general permit.
  3. ~~For purposes of this Section, Definition. "hazardous~~ Hazardous substances" means substances that are components of commercially packaged automotive supplies, such as motor oil, antifreeze, and routine cleaning supplies such as those used for cleaning windshields, but not degreasers, engine cleaners, or similar products.
- B. Notice of Intent to Discharge. In addition to the requirements in R18-9-A301(B), an applicant shall submit:
- ~~1. An applicant shall provide design information to demonstrate that the requirements in subsection (C) are met.~~
  - ~~2. In addition to the requirements in R18-9-A301(B), an applicant shall submit:~~
    - ~~1. a. The Department registration number for the drywell or documentation that a drywell registration form was submitted to the Department; and~~
    - ~~2. b. For a drywell constructed more than 90 days before submitting the Notice of Intent to Discharge is submitted to the Department, a certification signed, dated, and sealed by an Arizona-registered professional engineer or geologist that a site investigation concluded that the manhole cover or surface grate drywell is marked "Stormwater Only;" on the surface grate or manhole cover; and~~
      - ~~a. Analytical results from sampling of the drywell settling chamber sediment for pollutants reasonably expected to be present do not exceed the residential soil remediation levels or groundwater protection levels; or~~
      - ~~b. Soil borings indicate that:~~
        - ~~i. The settling chamber does not contain sediment for characterizing and comparison of results to soil remediation levels and the chamber has not been cleaned out within the last six months; or~~
        - ~~ii. Analytical results from sampling of the settling chamber sediment for pollutants reasonably expected to be present do not exceed the residential soil remediation levels or groundwater protection levels; or~~
        - ~~iii.ii. Soil borings indicate that neither Neither a soil remediation level nor groundwater protection level is exceeded in soil beneath the drywell. samples collected from a boring drilled within 5 feet of the drywell and sampled in 5 foot increments starting at a depth of 5 feet below ground surface and extending to a depth of 10 feet below the base of the drywell injection pipe, or~~
        - ~~iii. If coarse grained lithology prevents the collection of soil samples in a soil boring, a groundwater investigation that demonstrates compliance with Aquifer Water Quality Standards in groundwater at the applicable point of compliance unless the exceedance of a soil remediation level, groundwater protection level or Aquifer Water Quality Standard is addressed at the facility under corrective actions or remedial actions that are exempt from this program under A.R.S. § 49-250(B)(18).~~
  - ~~3. An applicant shall provide design information to demonstrate that the requirements in subsection (C) are met.~~
- C. Design requirements.
1. An applicant shall:
    - a. Include a flow control or pretreatment device identified in subsections (D)(1) or (2), or both, that removes, intercepts, or collects spilled motor fuel or hazardous substances before stormwater enters the drywell injection pipe;



- b. Calculate the volume of runoff generated in the design storm event and anticipate the maximum potential contaminant release quantity to design the treatment and holding capacity of the drywell;
  - c. Follow local codes and regulations to meet retention periods for removing standing water;
  - d. Locate the drywell at least 100 feet from a water supply well and 20 feet from an underground storage tank; ~~and~~
  - e. ~~Locate the bottom of the drywell injection pipe at least 10 feet above the groundwater table. The applicant shall seal off any zone of perched water above the groundwater table from the drywell injection pipe following the requirements in R12-15-816(I)(1) and (2). If during drilling and well installation the drywell borehole encounters saturated conditions, the applicant shall backfill the borehole with cement grout to a level at least 10 feet above the elevation that saturated conditions were encountered in the borehole prior to constructing the drywell in the borehole;~~
  - f. ~~Record the accurate latitude and longitude of the drywell location using a global positioning system (GPS) or site survey and record the location on site plans;~~
  - g. ~~Clearly mark the drywell "Stormwater Only" on the surface grate or manhole cover;~~
  - h. ~~Develop and maintain a current site plan showing the accurate location of the drywell and the latitude and longitude coordinates of the drywell location, surface drainage patterns, and the location of floor drains and French drains that are plumbed to the drywell or are used to alter drainage patterns, water supply wells, monitor wells, underground storage tanks, and chemical and waste usage, storage, loading, and treatment areas; and~~
  - i. ~~Prepare design plans showing details of drywell design and drainage design, including one or a combination of pre-approved technologies described in subsections (D)(1) and (2) designed to remove, intercept, and collect pollutants.~~
2. ~~An~~ For an existing drywell, an applicant that cannot meet the design requirements in subsections (C)(1)(d) and (e) shall provide the Department with the date of drywell construction, the depth of the drywell borehole and injection pipe, the distance from the drywell to the nearest water supply well and from the drywell to the underground storage tank, and the depth to the groundwater from the bottom of the drywell injection pipe.
- D. Flow control and pretreatment. A permittee shall ensure that motor fuels and other hazardous substances are not discharged to the subsurface. A permittee may use any of the following flow control or pretreatment technologies:
- 1. Flow control. The permittee shall ensure that motor fuel and hazardous substance spills are removed before allowing stormwater to enter the drywell.
    - a. Normally closed manual or automatic valve with a retention basin. The permittee shall leave a normally closed valve in a closed position except when stormwater is allowed to enter the drywell;
    - b. Raised drywell inlet. The permittee shall:
      - i. Raise the drywell inlet at least 6 inches above the bottom of the retention basin or other storage structure, or install a 6-inch asphalt or concrete raised barrier encircling the drywell inlet to provide a non-draining storage capacity within the retention basin or storage structure for complete containment of a spill; and
      - ii. Ensure that the storage capacity is at least 110 percent of the ~~combined~~ volume of the design storm event required by the local jurisdiction ~~and the maximum releasable quantity of spilled motor fuel~~ and the estimated volume of a potential motor fuel spill based on the facility's past incident reports or incident reports for other facilities that are similar in design;
    - c. Magnetic mat or cap. The permittee shall ensure that the drywell inlet is sealed with a mat or cap at all times, except after rainfall or storm event when the mat or cap is temporarily removed to allow stormwater to enter the drywell; and that the mat or cap is always used with a retention basin or other type of storage;
    - d. Primary sump, interceptor, or settling chamber. The permittee may use a primary sump, interceptor, or settling chamber only in combination with another flow control or pretreatment technology.
      - i. The permittee shall remove motor fuel or hazardous substances from the sump, interceptor, or chamber before allowing stormwater to enter the drywell.

- ii. The permittee shall install a settling chamber or sump and allow the suspended solids to settle before stormwater flows into a drywell; install the drywell injection pipe in a separate chamber and connect the sump, interceptor, or chamber to the drywell inlet by piping and valving to allow the stormwater to enter the drywell.
      - iii. The permittee may install fuel hydrocarbon detection sensors in the sump, interceptor, or settling chamber that use flow control to prevent fuel from discharging into the drywell;
- 2. Pretreatment. The permittee shall prevent the bypass of motor fuels and hazardous substances from the pretreatment system to the drywell during periods of high flow.
  - a. Catch basin inlet filter. The permittee shall:
    - i. Install a catch basin inlet filter to fit inside a catchment drain to prevent motor fuels and hazardous substances from entering the drywell,
    - ii. Ensure that a motor fuel spill or a spill during a high rainfall does not bypass the system and directly release to the drywell injection pipe; and
    - iii. Combine the catch basin inlet filter with a flow control technology to prevent contaminated stormwater from entering the drywell injection pipe;
  - b. Combined settling chamber and a oil/water separator.
    - i. The permittee shall install a system that incorporates a catch basin inlet, a settling chamber, and an oil/water separator.
    - ii. The permittee may incorporate a self-sealing mechanism, such as fuel hydrocarbon detection sensors that activate a valve to cutoff flow to the drywell inlet.
  - c. Combined settling chamber and oil/water separator, and filter/adsorption. The permittee shall:
    - i. Allow for adequate collection and treatment capacity for solid and liquid separation; and
    - ii. Allow a minimum treated outflow from the system to the drywell inlet of 20 gallons per minute. If a higher outflow rate is anticipated, the applicant shall design a larger collection system with storage capacity.
  - d. Passive skimmer.
    - i. If a passive skimmer is used, the permittee shall install sufficient hydrocarbon adsorbent materials, such as pads and socks, or suspend the materials on top of the static water level in a sump or other catchment to absorb the entire volume of expected or potential spill.
    - ii. The permittee may use a passive skimmer only in combination with another flow control or pre-treatment technology.
- E. Inspection. A permittee shall:
  - 1. Conduct an annual inspection of the drywell for sediment accumulation in the chambers, and flow control and treatment systems to ensure that the drywell is functioning properly; and
  - 2. If the stormwater fails to drain through the drywell within 36 hours, inspect the treatment system and piping to ensure that it is functioning properly, and repair and maintain as needed.
- F. Operation and maintenance. A permittee shall:
  - 1. Operate the drywell only for the subsurface disposal of stormwater;
  - 2. Remove or treat any motor fuel or hazardous substance spills;
  - 3. Replace the adsorbent material in skimmers, if installed, when the adsorbent capacity is reached;
  - 4. Maintain valves and associated piping;
  - 5. Maintain magnetic caps and mats, if installed;
  - 6. Remove sludge from the oil/water separator and replace the filtration or adsorption materials to maintain treatment capacity;
  - 7. Remove sediment from the catch basin inlet filters and retention basins to maintain required storage capacity;
  - 8. Remove accumulated sediment from the settling chamber annually or when 25 percent of the effective settling capacity is filled, whichever occurs first; and
  - 9. Provide new employee training within one month of hire and annual employee training on how to maintain and operate flow control and pretreatment technology used in the drywell.
- ~~G. Closure Requirements.~~
  - ~~1. A permittee shall comply with the following closure requirements:~~
    - ~~a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;~~

- b. ~~Remove sediments and any drainage components, such as stand pipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;~~
  - c. ~~Remove the top of the drywell, including the upper settling chamber to a depth of at least six feet below the ground surface. The permittee may use a backhoe or other excavation equipment;~~
  - d. ~~Fill the remaining settling chamber with clean, mechanically compacted silt, clay, similar engineered material, or ABC slurry;~~
  - e. ~~Place a cement grout plug at least two feet thick with the top set at four feet below the ground surface;~~
  - f. ~~Backfill the remainder of the drywell to the land surface with clean silt, clay, or engineered material. Materials containing hazardous substances are prohibited from use in backfilling the drywell; and~~
  - g. ~~Mechanically compact the backfill.~~
2. ~~If a permittee uses procedures other than those listed in subsection (G)(1) in closure, the permittee shall demonstrate to the Department that those procedures are equivalent to the procedures listed in subsection (G)(1) and will prevent any fluid migration from the ground surface to an aquifer and obtain approval before implementation;~~
  3. ~~Within 30 days of closure, the permittee shall submit written verification of the closure procedures the permittee used to the Department with the drywell registration number, or a completed registration form. The written verification shall specify:~~
    - a. ~~The reason for the closure;~~
    - b. ~~The materials and methods used to abandon the drywell;~~
    - c. ~~The name of the contractor who performed the closure;~~
    - d. ~~The completion date;~~
    - e. ~~Any sampling data collected from the drywell investigation if performed or if required by the Department; and~~
    - f. ~~Sump construction details, if a sump is constructed to replace the abandoned drywell.~~
  4. ~~The Department may require additional investigations or corrective actions if any of the following conditions exist:~~
    - a. ~~The permittee has not satisfied the closure requirements in A.A.C. R18-9-A306,~~
    - b. ~~The permittee provided incorrect or inaccurate information or there is relevant information missing from the permit application or closure reports,~~
    - c. ~~The permittee has not eliminated discharges from the facility through closure activities, or~~
    - d. ~~Closure and decommissioning activities have not demonstrated or achieved compliance with aquifer water quality standards.~~
  5. ~~If no motor fuel or hazardous substance spill enters the drywell, the permittee complies with the closure requirements under R18-9-A306 by satisfying the requirements in subsections (G)(1) or (2).~~
  6. ~~If a motor fuel or hazardous substance spill has entered the injection pipe, the permittee shall comply with the requirements in A.R.S. § 49-252, A.A.C. R18-9-A306, and subsection (H)(1)(c) and (2) to close the drywell.~~
- G. ~~Recordkeeping. A permittee shall maintain for at least 10 years, the following documents on-site, or at the closest practical place of work, and make the documents available to the Department upon request:~~
1. ~~A log book that documents drywell maintenance, inspections, employee training, and sampling activities;~~
  2. ~~A site plan showing the location of the drywell, the latitude and longitude coordinates of the drywell, surface drainage patterns and the location of floor drains or French drains that are plumbed to the drywell or are used to alter drainage patterns, water supply wells, monitor wells, underground storage tanks, and places where motor fuel and hazardous substances are used, stored, or loaded;~~
  3. ~~A design plan showing details of drywell design and drainage design, including one or a combination of the pre-approved flow control and pretreatment technologies;~~
  4. ~~An operations and maintenance manual that includes:~~
    - a. ~~Procedures to prevent and contain spills and minimize discharges to the drywell and a list of actions and specific methods that will be used for motor fuel and hazardous substance spills or leaks;~~
    - b. ~~Methods and procedures for inspection and operation and maintenance activities;~~
    - c. ~~Procedures for spill response; and~~

- d. A description of the employee training program for drywell inspections, maintenance, and operations.
- 5. Drywell sediment waste characterization and disposal manifest records for sediments removed during routine inspections and maintenance activities; and
- 6. Sampling plans and certified laboratory reports and chain of custody forms for soil, sediment, and groundwater sampling associated with drywell site investigations.

H. Spills.

- 1. ~~A permittee shall:~~
  - a. ~~Notify the Department within 24 hours of any spill of motor fuel or hazardous substances that enters into the drywell or exceeds the treatment capacity of the pretreatment system;~~
  - b. ~~Contain, cleanup, and dispose of, according to local, state, and federal requirements, any spill or leak of motor fuel and hazardous substance in the drywell drainage area and basin drainage area; and~~
  - c. ~~If the spill reaches the injection pipe, drill a soil boring within five feet of the drywell inlet chamber and sample in five foot increments to a depth extending at least 10 feet below the base of the injection pipe to determine whether a soil remediation level or groundwater protection level has been exceeded in the subsurface.~~
- 2. ~~The Department may require additional investigations or corrective actions based on its assessment of whether an exceedance of a soil remediation level or groundwater protection level in the soil boring poses a risk of noncompliance with human health or water quality standards.~~
- 1. In the event of a spill, the permittee shall:
  - a. Notify the Department within 24 hours of any spill of motor fuel, or hazardous or toxic substance that enters into the drywell or exceeds the treatment capacity of the pretreatment system;
  - b. Contain, clean up, and dispose of, according to local, state, and federal requirements, any spill or leak of motor fuel and hazardous substance in the drywell drainage area and basin drainage area; and
  - c. If the spill reaches the drywell injection pipe, drill a soil boring within 5 feet of the drywell inlet chamber and sample soil in 5-foot increments from 5 feet below ground surface to a depth extending at least 10 feet below the base of the injection pipe to determine whether a soil remediation level or groundwater protection level has been exceeded in the subsurface. The permittee shall submit the results to the Department within 60 days of the date of the spill. The report shall notify the Department if the facility is under an existing approved corrective action plan or remedial action plan as defined in A.R.S. § 49-250(B)(18).
- 2. Based on the results of subsection (F)(1)(c), the Director may require additional investigations or corrective actions for spills at facilities not operating under an approved corrective action plan.
  - a. The Director shall notify the permittee if a corrective action plan, subject to the hourly rate fee under R18-13-102(B), is required.
  - b. Within 90 days of the Director's written notification, the permittee shall submit the corrective action plan. The corrective action plan shall:
    - i. Define lateral and vertical extent of contamination. If contamination extends to groundwater or to coarse grained lithology that extends to groundwater the permittee shall notify the Department in writing within five days of becoming aware of the contamination;
    - ii. Define the area of soil concentrations exceeding the soil remediation levels and groundwater protection levels;
    - iii. Determine the depth to groundwater beneath the facility; and
    - iv. Describe the steps that will be taken to address soil contamination that exceeds soil remediation levels or groundwater protection levels to achieve clean closure;
    - v. Provide a schedule for implementing the plan to achieve clean closure;
  - c. The permittee shall submit a report to the Director verifying that the correction actions have been implemented;
  - c. If the report demonstrates that the corrective actions returned the facility to compliance with Aquifer Water Quality Standards at the point of compliance, the Director shall notify the permittee that permittee may continue operation under this general permit.

I. Closure and decommissioning requirements.

1. A permittee shall:
  - a. Retain a drywell drilling contractor, licensed under 4 A.A.C. 9, to close the drywell;
  - b. Remove sediments and any drainage components, such as stand pipes and screens from the drywell's settling chamber and backfill the injection pipe with cement grout;
  - c. Remove the top of the drywell, including the upper settling chamber to a depth of at least 6 feet below the ground surface. The permittee may use a backhoe or other excavation equipment; and
  - d. Fill the remaining settling chamber with clean, mechanically compacted silt, clay, similar engineered material, or ABC slurry;
  - e. If the settling chamber is not removed, place a cement plug at least 2 feet thick and no deeper than 4 feet below ground surface.
  - f. Backfill the remainder of the drywell to the land surface with clean silt, clay, or engineered material. Materials containing hazardous substances are prohibited from use in backfilling the drywell; and
  - g. Mechanically compact the backfill;
2. Within 30 days of decommissioning and closure, the permittee shall submit written verification to the Department that the closure has removed all material that contributed to a continued discharge and the permittee has eliminated to the greatest degree practical any reasonable probability of further discharge from the facility and of exceeding Aquifer Water Quality Standards at the applicable point of compliance. . The written verification shall specify:
  - a. The reason for the closure;
  - b. the drywell registration number;
  - c. The general permit reference number;
  - d. The materials and methods used to abandon the drywell;
  - e. The name of the contractor who performed the closure;
  - f. The completion date;
  - g. Any sampling data; and
  - g. Sump construction details, if a sump was constructed to replace the abandoned drywell;
  - h. Any other information necessary to verify that closure has been achieved.

I. Recordkeeping. A permittee shall maintain for at least 10 years, the following documents on-site, or at the closest practical place of work, and make the documents available to the Department upon request:

1. A log book that documents drywell maintenance, inspections, employee training, and sampling activities;
2. A site plan showing surface drainage patterns and the location of floor drains, water supply wells, monitor wells, underground storage tanks, and places where motor fuel and hazardous substances are used, stored, or loaded;
3. A design plan showing details of drywell design and drainage design, including one or a combination of the pre-approved flow control and pretreatment technologies; and
4. An operations and maintenance manual that includes:
  - a. Procedures to prevent and contain spills and minimize discharges to the drywell and a list of actions and specific methods that will be used for motor fuel and hazardous substance spills or leaks;
  - b. A method and procedures for inspection and operation and maintenance activities;
  - c. The procedure for spill response; and
  - d. A description of the employee training program.

**R18-9-C305. 2.05 General Permit: Management, Operation, and Maintenance of a Sewage Collection System**

A. Definition. "Imminent and substantial threat to public health" means when:

1. The volume of a release is more than 2000 gallons, or
2. The volume of a release is more than 50 gallons and any one of the following apply:
  - a. The release entered onto a recognized public area and members of the public were present during the release or before the release was mitigated;
  - b. The release occurred on a public or private street and pedestrians were at risk of being splashed by vehicles during the release or before the release was mitigated;
  - c. The release entered a perennial stream, an intermittent stream during a time of flow, a

- waterbody other than an ephemeral stream, a normally dry detention or sedimentation basin, or a similar feature;
- d. The release occurred within an occupied building due to a condition in the permitted sewage collection system; or
  - e. The release occurred within 100 feet of a school or a public or private drinking water supply well.
- B. A 2.05 General Permit allows a permittee to manage, operate, and maintain a sewage collection system under the terms of a CMOM Plan that complies with subsection (D). The Department considers a sewage collection system operating in compliance with an AZPDES or NPDES permit that incorporates provisions for capacity, management, operation, and maintenance of the system to comply with the provisions of this general permit regardless of whether a Notice of Intent to Discharge for the system was submitted to the Department.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. The name and ownership of any downstream sewage collection system and sewage treatment facility that receives sewage from the applicant's sewage collection system;
  2. A map of the service area for which general permit coverage is sought, showing streets and sewage service boundaries for the sewage collection system;
  3. A statement indicating that the CMOM Plan is in effect and the principal officer or ranking elected official of the sewage collection system has approved the plan; and
  4. Documentation that a local ordinance requires hookup of an on-site wastewater treatment facility to the sewage collection system.
- D. CMOM Plan.
1. A permittee shall continuously implement the CMOM Plan for the permitted sewage collection system under the permittee's ownership, management, or operational control. The CMOM Plan shall provide instructions on:
    - a. How to properly manage, operate, and maintain all parts of the sewage collection system that are owned by the permittee, or under the permittee's operational control, to meet the performance requirements in R18-9-E301(B);
    - b. How to maintain sufficient capacity to convey base flows and peak flows for all parts of the collection system owned by the permittee, or under the permittee's operational control, without surcharging any part of the collection system, except during storm events exceeding the 10-year storm event or from blockages caused by the unintended or intended actions of third parties;
    - c. All reasonable and prudent steps to stop and mitigate the impact of all releases from the collection system owned by the permittee, or under the permittee's operational control; and
    - d. The procedure for reporting releases as described in subsection (F).
  2. The permittee shall maintain and update the CMOM Plan for the duration of this general permit and make it available for review to the Department or the public upon request.
  3. If the Department requests the CMOM Plan and upon review the Department finds that the CMOM Plan is deficient, the Department shall notify the permittee in writing of the specific deficiency and the reason for the deficiency, and shall establish a deadline of at least 60 days for the permittee to correct the deficiency and submit the amended provision to the Department for approval.
- E. Sewage release response determination. If the sewage collection system releases sewage, the Department shall consider one or more of the following factors in determining compliance:
1. Sufficiency of the CMOM Plan.
    - a. The level of detail provided by the CMOM Plan is appropriate for the size, complexity, and age of the system;
    - b. The level of detail provided by the CMOM Plan is appropriate considering geographic, climatic, and hydrological factors that may influence the sewage collection system;
    - c. The CMOM Plan provides schedules for the periodic preventative maintenance of the sewage collection system, including cleaning of all reaches of the sewage collection system below a specified pipe diameter.
      - i. The CMOM Plan may allow inspection of sewer lines by Closed Circuit Television (CCTV) with postponement of cleaning to the next scheduled cleaning cycle if the CCTV inspection indicated that cleaning of a reach of the sewer is not needed.

- ii. The CMOM Plan may specify inspection and cleaning schedules that differ according to pipe diameter or other characteristics of the sewer;
    - d. The CMOM Plan identifies components of the sewage collection system that have insufficient capacity to convey, when clean, the peak wet weather flow of a 10-year storm event without surcharging. For those identified components, a capital improvement plan exists for achieving sufficient wet weather flow capacity within five years of the effective date of this general permit;
    - e. The CMOM Plan includes an overflow emergency response plan appropriate to the size, complexity, and age of the sewage collection system considering geographic, climatic, and hydrological factors that may influence the system;
    - f. The CMOM Plan establishes a procedure to investigate and enforce against commercial and industrial entities whose flows to the sewage collection system have caused or contributed to releases;
    - g. The CMOM Plan adequately addresses management of flows from upstream satellite sewage collection systems not under the operational control of the permittee through procedures to investigate and enforce against the owners or operators of the satellite systems, relying on separate 2.05 General Permit coverage obtained by the owner or operator of the satellite system, or by other appropriate means; or
    - h. Any other factor necessary to determine if the CMOM Plan is sufficient;
  - 2. Compliance with the CMOM Plan.
    - a. The permittee's response to releases as established in the overflow emergency response plan, including whether:
      - i. Maintenance staff respond to and arrive at the release within the time-frames specified in the plan;
      - ii. Maintenance staff follow all written procedures to remove the cause of the release;
      - iii. Maintenance staff contain, recover, clean up, disinfect, and otherwise mitigate the release of sewage; or
      - iv. Required notifications to the Department, public health agencies, drinking water suppliers, and the public are provided;
    - b. The permittee's activities and timeliness in:
      - i. Implementing specified periodic preventative maintenance measures,
      - ii. Implementing the capital improvement plan,
      - iii. Investigating and enforcing against upstream satellite sewage collection systems if those systems are impediments to the proper management of flows in the permittee's sewage collection system; or
    - c. Any other factor necessary to determine CMOM Plan compliance; or
  - 3. Compliance with the reporting requirements in subsection (F) and the public notice requirements in subsection (G); or
  - 4. The release creates substantial endangerment to public health or the environment.
- F. Reporting requirements.
- 1. Sewage releases.
    - a. A permittee shall report to the Department, by telephone, facsimile, or applicable notification form on the Department's Internet web site, any release that is an imminent and substantial threat to public health as soon as practical, but no later than 24 hours of becoming aware of the release.
    - b. A permittee shall submit a report to the Department within five business days of becoming aware of a release that is an imminent and substantial threat to public health. The report shall include
      - i. The location of the release;
      - ii. The sewage collection system component from which the release occurred;
      - iii. The date and time the release began, was stopped, and when mitigation efforts were completed;
      - iv. The estimated number of persons exposed to the release, the estimated volume of sewage released, the reason the release is considered an imminent and substantial threat to public health if the volume is 2000 gallons or less, and where the release flowed;

- v. The efforts made by the permittee to stop, contain, and clean up the released material;
  - vi. The amount and type of disinfectant applied to mitigate any associated public health risk; and
  - vii. The cause of the release or effort made to determine the cause, and any effort made to help prevent a future reoccurrence.
2. Annual report. The permittee shall:
- a. Submit an annual report to the Department postmarked no later than January 31. The report shall:
    - i. Tabulate all releases of more than 20 gallons caused by a condition in the permitted sewage collection system and any smaller releases reported under subsection (F)(1) as an imminent and substantial threat to public;
    - ii. Summarize information on releases previously provided to the Department; and
    - iii. For other reportable releases, provide the information required in subsection (F)(1)(b);
  - b. Provide an amended map of the service area boundaries if, during the calendar year, any area was removed from the service area or if any area was added to the service area that the permittee wishes to include under this general permit and associated CMOM Plan.
- G. Public notice. The permittee shall post a public notice citing the hazard of potential releases at any location where the number of reportable releases from a sewage collection system exceeded three during any 12-month period. The permittee may remove the public notice if no releases from the location were reported during a later 12-month period and the permittee followed all actions specified in the CMOM Plan to prevent releases at that location.

**R18-9-C306. 2.06 General Permit: Fish Hatchery Discharge to a Perennial Surface Water**

- A. A 2.06 General Permit allows for a fish hatchery to discharge to a perennial surface water under a valid AZPDES or NPDES permit if Aquifer Water Quality Standards are met at the point of discharge.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall provide:
  - 1. The applicable AZPDES or NPDES permit number,
  - 2. A description of the facility, and
  - 3. A laboratory report characterizing the wastewater discharge including the analytical results for all numeric Aquifer Water Quality Standards under R18-11-401.
- C. Design and operational requirements. An applicant shall:
  - 1. Collect a representative sample of the discharge to demonstrate compliance with all numeric water quality standards and make the results available to the Department upon request;
  - 2. Maintain a record of the average and daily flow rates and make it available to the Department upon request.

**PART D. TYPE 3 GENERAL PERMITS**

**R18-9-D301. 3.01 General Permit: Lined Impoundments**

- A. A 3.01 General Permit allows a lined surface impoundment and a lined secondary containment structure. A permittee shall:
  - 1. Ensure that inflow to the lined surface impoundment or lined secondary containment structure does not contain organic pollutants identified in A.R.S. § 49-243(I);
  - 2. Ensure that inflow to the lined surface impoundment or lined secondary containment structure is from one or more of the following sources:
    - a. Evaporative cooler overflow, condensate from a refrigeration unit, or swimming pool filter backwash in excess of 1000 gallons per day;
    - b. Wastewater that does not contain sewage, temporarily stored for short periods of time due to process upsets or rainfall events, provided the wastewater is promptly removed from the facility as required under subsection (D)(5). Facilities that continually contain wastewater as a normal function of facility operations are not covered under this general permit;
    - c. ~~Storm water~~ Stormwater runoff that is not permitted under A.R.S. § 49-245.01 because the facility does not receive solely ~~storm water~~ stormwater or because the runoff is regulated under the Clean Water Act but is not considered ~~storm water~~ stormwater under the Act;
    - d. Emergency fire event water;



- e. Wastewater from air pollution control devices at asphalt plants if the wastewater is routed through a sedimentation trap or sump and an oil/water separator before discharge;
  - f. Non-contact cooling tower blowdown and non-contact cooling water, except discharges from electric generating stations with more than 100 megawatts generating capacity;
  - g. Boiler blowdown;
  - h. Wastewater derived from a potable water treatment system, including clarification sludge, filtration backwash, lime and lime softening sludge, ion exchange backwash, and reverse osmosis spent waste;
  - i. Wastewater from food washing;
  - j. Heat exchanger return water ~~in excess of 1000 gallons per day; and~~
  - k. Wastewater from industrial laundries;
  - l. Hydrostatic test water from a pipeline, tank, or appurtenance previously used for transmission of fluid;
  - m. Wastewater treated through an oil/water separator before discharge; and
  - n. Cooling water or wastewater from food processing.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
- 1. A listing and description of all sources of inflow;
  - 2. A representative chemical analysis of each expected source of inflow. If a sample is not available before facility construction, a permittee shall provide the chemical analysis of each inflow to the Department within 60 days of each inflow to the facility;
  - 3. A narrative description of how the conditions of this general permit ~~is~~ are satisfied. The narrative shall include a Quality Assurance/Quality Control program for liner installation, impoundment maintenance and repair, impoundment operational procedures; and
  - 4. A contingency plan that specifies actions ~~to be taken~~ proposed in case of an accidental release from the facility, overtopping of the impoundment, or breach of the berm, and unauthorized inflows into the impoundment or containment structure.
- C. Design and installation requirements. An applicant shall:
- 1. Design and construct surface water controls ~~The applicant shall to:~~
    - a. Ensure that the impoundment or secondary containment structure maintains, using design volume or mechanical systems, normal operating volumes, if any, and any inflow from the 100-year, 24-hour storm event. The facility shall maintain ~~two~~ at least 2 feet of freeboard or an alternative level of freeboard that the applicant demonstrates is reasonable, considering the size of the impoundment and meteorologic and other site-specific factors; and
    - b. Direct any surface water run-on from the 100-year 24-hour storm event not intended for capture by facility design around the facility;
  - 2. Ensure that the facility design accommodates any significant geologic hazard, addressing static and seismic stability. The applicant shall document any design adjustments for this reason in the Notice of Intent to Discharge;
  - 3. Ensure that site preparation includes, as appropriate, clearing the area of vegetation, grubbing, grading, and embankment, and subgrade preparation. The applicant shall ensure that supporting surface slopes and foundation are stable and structurally sound; and
  - 4. ~~Impoundment~~ Comply with the following impoundment lining requirements. The applicant shall:
    - a. ~~Ensure~~ If a synthetic liner is used, ensure that the liner is at least a 30-mil geomembrane liner or a 60-mil liner if High Density Polyethylene is used, or an alternative, and that the liner's calculated seepage rate is less than 550 gallons per acre per day, and:
      - i. ~~If a synthetic liner is used, the applicant shall anchor~~ Anchor the liner by securing it in an engineered anchor trench; ~~and~~
      - ii. ~~The applicant shall ensure~~ Ensure that the liner is ultraviolet resistant if it is regularly exposed to sunlight; and
      - iii. Ensure that the liner is constructed of a material that is chemically compatible with the wastewater or impounded solution and is not affected by corrosion or degradation;
    - b. If a soil liner is used;
      - i. ~~ensure~~ Ensure it resists swelling, shrinkage, and cracking. ~~The applicant shall:~~
      - ii. Ensure that the soil is at least ~~one~~ 1 foot thick and compacted to a uniform density of 95% percent to meet the "Standard Test Method for Laboratory Compaction

Characteristics of Soil Using Standard Effect (12,400 ft-lbf/ft<sup>3</sup>),” (D 698-91), published by the American Society for Testing and Materials, reapproved 1998. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959; and

~~ii~~.iii. Upon installation, protect the soil liner to prevent desiccation.;

- c. For new facilities, develop and implement a construction Quality Assurance/Quality Control program that addresses site and subgrade preparation, inspection procedures, field testing, laboratory testing, and final inspection after construction of the liner to ensure functional integrity.
- D. Operational requirements. A permittee shall:
1. Maintain sufficient freeboard to manage the 100-year, 24-hour storm event ~~plus two~~ including at least 2 feet of freeboard under normal operating conditions. Management of the 100-year, 24-hour storm event may be through design, pumping, or a combination of both;
  2. Remove accumulated residues, sediments, debris, and vegetation to maintain the integrity of the liner material and design capacity of the impoundment;
  3. Perform and document a visual inspection for damage to the liner material and for accumulation of residual material at least monthly. The operator shall conduct an inspection within 72 hours after the facility receives a significant volume of ~~storm water~~ stormwater inflow;
  4. Repair damage to the liner following the Quality Assurance/Quality Control Plan required under subsection (B)(3); and
  5. Remove all inflow from the impoundment as soon as practical, but no later than 60 days after a temporary event, for facilities designed to contain inflow only for temporary events, such as process upsets.
- E. Recordkeeping. A permittee shall maintain at the site, the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available;
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure;
  3. Capacity design criteria;
  4. A list of standard operating procedures;
  5. The construction Quality Assurance/Quality Control program documentation; and
  6. Records of any inflow into the impoundment other than those permitted by this Section.
- F. Reporting requirements.
1. If the liner is breached, as evidenced by a drop in water level not attributable to evaporation, or if the impoundment breaches or is overtopped due to a catastrophic or other significant event, the permittee shall report the circumstance to the Department within five days of discovery and implement the contingency plan required in subsection (B)(4). The permittee shall submit a final report to the Department within 60 days of the event summarizing the circumstances of the problem and corrective actions taken.
  2. The permittee shall report unauthorized flows into the impoundment to the Department within five days of discovery and implement the contingency plan required in subsection (B)(4).
- G. Closure requirements. The permittee shall notify the Department of the intent to close the facility permanently. Within 90 days following closure notification the permittee shall comply with the closure requirements in R18-9-A306 and the following requirements, as applicable:
1. Remove any solid residue on the liner material and dispose of it appropriately;
  2. Inspect the liner material for evidence of holes, tears, or defective seams that could have leaked;
  3. If evidence of leakage is discovered, remove the liner in the area of suspected leakage and sample potentially impacted soil. If soil remediation levels are exceeded, the permittee shall define the lateral and vertical extent of contamination and, within 60 days, notify the Department and submit an action plan for achieving clean closure for the Department’s approval before implementing the plan;
  4. If there is no evidence of holes, tears, or defective seams that could have leaked:
    - a. Cover the liner in place or remove it for disposal or reuse if the impoundment is an excavated

- impoundment,
- b. Remove and dispose of the liner elsewhere if the impoundment is bermed, and
- c. Grade the facility to prevent the impoundment of water; and
- 5. Notify the Department within 60 days following closure that the action plan ~~has been~~ was implemented and the closure is complete.

**R18-9-D302. 3.02 General Permit: Process Water Discharges from Water Treatment Facilities**

- A. A 3.02 General Permit allows filtration backwash and discharges obtained from sedimentation and coagulation in the water treatment process from facilities that treat water for industrial process or potable uses. The permittee shall ensure that:
  - 1. The discharge ~~shall meet~~ meets all numeric Aquifer Water Quality Standards for inorganic chemicals, organic chemicals, and pesticides established in R18-11-406(B) through (D);
  - 2. The discharge ~~shall meet~~ meets one of the following criteria for microbiological contaminants:
    - a. ~~A fecal coliform limit, using the membrane filter technique, of two colony forming units per 100 ml (seven sample median) and a single sample maximum limit of 23 colony forming units per 100 ml, or equivalent numbers using the multiple tube fermentation method; or~~
    - b. ~~A seven sample median limit of 200 colony forming units per 100 ml and a single sample maximum limit of 800 colony forming units per 100 ml for fecal coliform, provided the average daily flow processed by the water treatment facility is less than 250,000 gallons.~~
      - a. Either the concentration of fecal coliform organisms is not more than 2/100 ml or the concentration of *E. coli* bacteria is not more than 1/100 ml, or
      - b. Either the concentration of fecal coliform organisms is less than 200/100 ml or the concentration of *E. coli* bacteria is less than 126/100 ml provided the average daily flow processed by the water treatment facility is less than 250,000 gallons.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
  - 1. A characterization of the discharge, including a representative chemical and biological analysis of expected discharges and all source waters; and
  - 2. The design capacity of any impoundment covered by this general permit.
- C. Design and siting requirements. An applicant shall:
  - 1. Ensure that the depth to the static groundwater table is greater than 20 feet;
  - 2. Not locate the area of discharge immediately above karstic or fractured bedrock, unless the discharge meets the microbial limits specified in subsection (A)(2)(a);
  - 3. Maintain a minimum horizontal setback of 100 feet between the facility and any water supply well;
  - 4. Design and construct an impoundment, used to manage process water discharges, to maintain, using design volume or mechanical systems, normal operating volumes, if any, and any inflow from the 100-year, 24-hour storm event or may discharge to surface water under the conditions of a ~~National Pollution Discharge Elimination System NPDES or AZPDES~~ permit. The applicant shall:
    - a. Design the facility to maintain ~~two~~ 2 feet of freeboard or an alternative level of freeboard that the applicant demonstrates is reasonable, considering the size of the impoundment, meteorologic, and other site-specific factors; and
    - b. Divert any surface water run-on from the 100-year, 24-hour storm event not intended for capture by facility design around the facility; and
  - 5. Manage off site disposal of ~~sludges~~ sludge according to A.R.S. Title 49, Chapter 4.
- D. Operational requirements.
  - 1. Inorganic chemical, organic chemical, and pesticide monitoring;
    - a. The permittee shall monitor any discharge annually to determine compliance with the requirements of subsection (A)(1).
    - b. If the concentration of any constituent exceeds the numeric Aquifer Water Quality Standard, the permittee shall submit a report to the Department with a proposal for mitigation and shall increase monitoring frequency for that pollutant to quarterly.
    - c. If the condition in subsection (D)(1)(b) persists for two additional quarters, the permittee shall submit an application for an individual permit.
  - 2. Microbiological contaminants monitoring;
    - a. The permittee shall monitor any discharge annually to determine compliance with the requirements of subsection (A)(2).

- b. If the concentration of any constituent exceeds the limits established in subsection (A)(2), the permittee shall submit a report to the Department with a proposal for mitigation and increase monitoring frequency for that pollutant to monthly.
  - c. If the condition in subsection (D)(2)(b) persists for three additional months, the permittee shall submit an application for an individual permit.
- E. Recordkeeping. A permittee shall maintain at the site, the following information for at least 10 years and make it available to the Department upon request:
  - 1. Construction drawings and as-built ~~drawings~~ plans, if available;
  - 2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure;
  - 3. Water quality data collected under subsection (D);
  - 4. Standard operating procedures; and
  - 5. Records of any discharge other than those identified by subsection (B).
- F. Reporting requirements. The permittee shall report unauthorized flows into the impoundment to the Department within five days of discovery.

**R18-9-D303. 3.03 General Permit: Vehicle and Equipment Washes**

- A. A 3.03 General Permit allows a facility that discharges water from washing vehicle exteriors and vehicle equipment. This general permit does not authorize:
  - 1. Discharge water that typically results from the washing of vehicle engines unless the discharge is to a lined surface impoundment;
  - 2. Direct discharges of sanitary sewage, vehicle lubricating oils, antifreeze, gasoline, paints, varnishes, solvents, pesticides, or fertilizers;
  - 3. Discharges resulting from washing the interior of vessels used to transport fuel products or chemicals, or washing equipment contaminated with fuel products or chemicals; or
  - 4. Discharges resulting from washing the interior of vehicles used to transport mining concentrates that originate from the same mine site, unless the discharge is to a lined surface impoundment.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit a narrative description of the facility and a design of the disposal system and wash operations.
- C. Design, installation, and testing requirements. An applicant shall:
  - 1. Design and construct the wash pad:
    - a. To drain and route wash water to a sump or similar sediment settling structure and an oil/water separator or a comparable pretreatment technology;
    - b. Of concrete or material chemically compatible with the wash water and its constituents; and
    - c. To support the maximum weight of the vehicle or equipment being washed with an appropriate safety factor.
  - 2. Not use unlined ditches or natural channels to convey wash water;
  - 3. Ensure that a surface impoundment meets the requirements in R18-9-D301(C)(1) and ~~(C)(3)~~ (3). The applicant shall ensure that berms or dikes at the impoundment can withstand wave action erosion and are adequately compacted to a uniform density not less than 95% percent;
  - 4. Ensure that a surface impoundment required for wash water described in subsection (A)(1) meets the design and installation requirements in R18-9-D301(C);
  - 5. If wash water is received by an unlined surface impoundment or engineered subsurface disposal system, the applicant shall:
    - a. Ensure that the annual daily average flow is less than 3000 gallons per day;
    - b. Maintain a minimum horizontal setback of 100 feet between the impoundment or subsurface disposal system and any water supply well;
    - c. Ensure that the bottom of the surface impoundment or subsurface disposal system is at least 50 feet above the static groundwater level and the intervening material does not consist of karstic or fractured bedrock ~~rock~~;
    - d. Ensure that the wash water receives primary treatment before discharge through, at a minimum, a sump or similar structure for settling sediments or solids and an oil/water separator or a comparable pretreatment technology designed to reduce oil and grease in the wastewater to 15 mg/l or less;
    - e. Withdraw the separated oil from the oil/water separator using equipment such as adjustable

skimmers, automatic pump-out systems, or level sensing systems to signal manual pump-out; and

- f. If a subsurface disposal system is used, design the system to prevent surfacing of the wash water.
- D. Operational requirements. The permittee shall:
1. Inspect the oil/water separator before operation to ensure that there are no leaks and that the oil/water separator is in operable condition;
  2. Inspect the entire facility at least quarterly. The inspection shall, at a minimum, consist of a visual examination of the wash pad, the sump or similar structure, the oil/water separator, and all surface impoundments;
  3. Visually inspect each surface impoundment at least monthly, to ensure the volume of wash water is maintained within the design capacity and freeboard limitation;
  4. Repair damage to the integrity of the wash pad or impoundment liner as soon as practical;
  5. Maintain the oil/water separator to achieve the operational performance of the separator;
  6. Remove accumulated sediments in all surface impoundments to maintain design capacity; and
  7. Use best management practices to minimize the introduction of chemicals not typically associated with the wash operations. Only biodegradable surfactant or soaps are allowed. Products that contain chemicals in concentrations likely to cause a violation of an Aquifer Water Quality Standard at the applicable point of compliance are prohibited.
- E. Monitoring requirements.
1. If wash water is discharged to an unlined surface impoundment or other area for subsurface disposal, the permittee shall monitor the wash water quarterly at the point of discharge for pH and for the presence of C<sub>10</sub> through C<sub>32</sub> hydrocarbons using a Department of Health Services certified method.
  2. If pH is not between 6.0 and 9.0 or the concentration of C<sub>10</sub> through C<sub>32</sub> hydrocarbons exceeds 50 mg/l, the permittee shall submit a report to the Department with a proposal for mitigation and shall increase monitoring frequency to monthly.
  3. If the condition in subsection (E)(2) persists for three additional months, the permittee shall submit an application for an individual permit.
- F. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available;
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure; and
  3. The Material Safety Data Sheets for the chemicals used in the wash operations and any required monitoring results.
- G. Closure requirements. ~~A~~ In addition to the closure requirements in R18-9-A306, a permittee shall comply with the closure requirements specified in R18-9-D301(G) if a liner has been used. If no liner is used the permittee shall grade the facility to prevent impoundment of water.

**R18-9-D304. 3.04 General Permit: ~~Non-storm Water~~ Stormwater Impoundments at Mining Sites**

- A. A 3.04 General Permit allows discharges to lined surface impoundments, lined secondary containment structures, and associated lined conveyance systems at mining sites.
1. A discharge may include one or more of the following:
    - a. Seepage from tailing impoundments, unleached rock piles, or process areas;
    - b. Process solution temporarily stored for short periods of time due to process upsets or rainfall, provided the solution is promptly removed from the facility as required under subsection (D);
    - c. ~~Storm water~~ Stormwater runoff not permitted under A.R.S. § 49-245.01 because the facility does not receive solely ~~storm water~~ stormwater or because the runoff is regulated under the Clean Water Act and is not considered ~~storm water~~ stormwater under the Act; and
    - d. Wash water specific to sand and gravel operations not covered by R18-9-B301(A).
  2. Facilities that continually contain process solution as a normal function of facility operations are not eligible for coverage under this general permit. If a normal process solution contains a pollutant regulated under A.R.S. § 49-243(I) this general permit does not apply if the pollutant will compromise the integrity of the liner.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:

1. A description of the sources of inflow to the facility. An applicant shall include a representative chemical analysis of expected sources of inflow to the facility unless a sample is not available, before facility construction, in which case the applicant shall provide a chemical analysis of solution present in the facility to the Department within 90 days after the solution first enters the facility;
  2. Documentation demonstrating that plans have been reviewed by a mining engineer or an Arizona-registered professional engineer before submission to the Department; and
  3. A contingency plan that specifies actions ~~to be taken~~ proposed in case of an accidental release from the facility, overtopping of the impoundment or breach of the berm, and unauthorized inflows into the impoundment or containment structure.
- C. Design, construction, and installation requirements. An applicant shall:
1. Design and construct the impoundment or secondary containment structure as specified under R18-9-D301(C)(1);
  2. Ensure that conveyance systems are capable of handling the peak flow from the 100-year storm;
  3. Construct the liner as specified in R18-9-D301(C)(4)(a);
  4. Develop and implement a Quality Assurance/Quality Control program that meets or exceeds the liner manufacturer's guidelines. The program shall address site and subgrade preparation, inspection procedures, field testing, laboratory testing, repair of seams during installation, and final inspection of the completed liner for functional integrity;
  5. If the facility is located in the 100-year flood plain, design the facility so it is protected from damage or flooding as a result of 100-year, 24-hour peak streamflows;
  6. Design and manage the facility so groundwater does not come into contact with the liner;
  7. Ensure that the facility accommodates any significant geologic hazard addressing static and seismic stability. The applicant shall document any design adjustments for this reason in the Notice of Intent to Discharge;
  8. Ensure that the site preparation includes, as appropriate, clearing the area of vegetation, grubbing, grading and embankment, and subgrade preparation. The applicant shall ensure that supporting surface slopes and foundation are stable and structurally sound;
  9. Ensure that the liner is anchored by being secured in an engineered anchor trench. If regularly exposed to sunlight, the applicant shall ensure that the liner is ultraviolet resistant; and
  10. Use compacted clay subgrade in areas with shallow groundwater conditions.
- D. Operational requirements. The permittee shall:
1. Maintain the freeboard required in subsection (C)(1) through design, pumping, or both;
  2. Remove accumulated residues, sediments, debris, and vegetation to maintain the integrity ~~and~~ of the liner and to maintain ~~the~~ the design capacity of the impoundment;
  3. Document a visual inspection for cracks, tears, perforations and residual build-up at least monthly. The operator shall conduct an inspection after the facility receives significant volumes of ~~storm water~~ stormwater inflow;
  4. Report cracks, tears, and perforations in the liner to the Department, and repair them as soon as practical, but no later than 60 days under normal operating conditions, after discovery of the crack, tear, or perforation;
  5. For facilities that temporarily contain a process solution due to process upsets, remove the process solution from the facility as soon as practical, but no later than 60 days after cessation of the upset;
  6. For facilities that temporarily contain a process solution due to rainfall, remove the process solution from the facility as soon as practical.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available;
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results and facility closure;
  3. Capacity design criteria;
  4. ~~List~~ A list of standard operating procedures;
  5. The Quality Assurance/Quality Control program required under subsection (C)(4); and
  6. Records of any unauthorized flows into the impoundment.
- F. Reporting requirements.
1. If the liner is breached, as evidenced by a drop in water level not attributable to evaporation, or if the impoundment breaches or is overtopped due to a catastrophic or other significant event, the permittee

shall report the circumstance to the Department within five days of discovery and implement the contingency plan required in subsection (B)(3). The permittee shall submit a final report to the Department within 60 days of the event summarizing the circumstances of the problem and corrective actions taken.

2. The permittee shall report unauthorized flows into the impoundment to the Department within five days of discovery and implement the contingency plan required in subsection (B)(3).
- G. Closure requirements. The permittee shall notify the Department of the intent to close the facility permanently. Within 90 days following closure notification the permittee shall comply with the closure requirements in R18-9-A306 and the following requirements, as applicable:
1. Remove any solid residue on the liner material and dispose of it appropriately;
  2. Inspect the liner material for evidence of holes, tears, or defective seams that could have leaked;
  3. If evidence of leakage is discovered, remove the liner in the area of suspected leakage and sample potentially impacted soil. If soil remediation levels are exceeded, the permittee shall, within 60 days notify the Department and submit an action plan for the Department's approval before implementing the plan;
  4. If there is no evidence of holes, tears, or defective seams that could have leaked:
    - a. Cover the liner in place or remove it for disposal or reuse if the impoundment is an excavated impoundment,
    - b. Remove and dispose of the liner elsewhere if the impoundment is bermed, and
    - c. Grade the facility to prevent the impoundment of water; and
  5. Notify the Department within 60 days following closure that the action plan has been implemented and the closure is complete.

#### **R18-9-D305. 3.05 General Permit: Disposal Wetlands**

- A. A 3.05 General Permit allows discharges of reclaimed water into constructed or natural wetlands, including waters of the United States, waters of the state, and riparian areas, for disposal. This general permit does not apply if the purpose of the wetlands is to provide treatment.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the name and individual permit number of the facility providing the reclaimed water.
- C. Design requirements. An applicant shall:
  1. Ensure that the reclaimed water released into the wetland meets numeric and narrative Aquifer Water Quality Standards for all parameters except for coliform bacteria and is Class A+ reclaimed water. A+ reclaimed water is wastewater that has undergone secondary treatment established under ~~R18-9-B204(B)(1)~~ R18-9-B204(B)(1), filtration, and meets a total nitrogen concentration ~~less than 10 mg/l~~ under R18-9-B204(B)(3) and fecal coliform limits under ~~R18-9-B204(B)(4)(b)~~ R18-9-B204(B)(4)(b);
  2. Maintain a minimum horizontal separation of 100 feet between any water supply well and the maximum wetted area of the wetland;
  3. Post signs at points of access and every 250 feet along the perimeter of the wetland stating, "CAUTION. THESE WETLANDS CONTAIN RECLAIMED WATER. DO NOT DRINK." The applicant shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol; and
  4. Ensure that wetland siting is consistent with local zoning and land use requirements.
- D. Operational requirements.
  1. A permittee shall manage the wetland to minimize vector problems.
  2. The permittee shall submit to the Department and implement a Best Management Practices Plan for operation of the wetland. The Best Management Practices Plan shall include:
    - a. A site plan showing the wetland footprint, point of inflow, ~~storm water~~ stormwater drainage, and placement of vegetation;
    - b. Management of flows into and through the wetland to minimize erosion and damage to vegetation;
    - c. Management of visitation and use of the wetlands by the public;
    - d. A management plan for vector control;
    - e. A plan or criteria for enhancing or supplementing of wetland vegetation; and
    - f. Management of shallow groundwater conditions on existing on-site wastewater treatment facilities.

3. The permittee shall perform quarterly inspections to review bank integrity, erosion evidence, the condition of signage and vegetation, and correct any problem noted.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available; and
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.
- F. Reporting requirements. The permittee shall provide the Department with an annual assessment of the biological condition of the wetland, including the volume of inflow to the wetland in the past year.

**R18-9-D306. 3.06 General Permit: Constructed Wetlands to Treat Acid Rock Drainage at Mining Sites**

- A. A 3.06 General Permit allows the operation of constructed wetlands that receive, with the intent to treat, acid rock drainage from a closed facility.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit a design, including information on the quality of the influent, the treatment process to be used, the expected quality of the wastewater, and the nutrients and other constituents that will indicate wetland performance.
- C. Design, construction, and installation. An applicant shall:
1. Ensure that:
    - a. Water released into the wetland is compatible with construction materials and vegetation;
    - b. Water released from the wetland meets numeric Aquifer Water Quality Standards, pH is between 6.0 and 9.0, and sulfate concentration is less than 1000 mg/l; and
    - c. Water released from the wetland complies with and is released under an individual permit and a ~~National Pollution Discharge Elimination System~~ NPDES or AZPDES Permit, if required;:
  2. Construct the treatment wetland with a liner, using low hydraulic conductivity artificial liner material, site-specific liner material, or both, to achieve a calculated seepage rate of less than 550 gallons per acre per day. The applicant shall:
    - a. Ensure that, if an artificial liner material is used, such as geomembrane, the material is underlain by at least ~~six~~ 6 inches of prepared and compacted subgrade;
    - b. Anchor the liner along the perimeter of the wetland; and
    - c. Manage the plants in the wetland to prevent species with root penetration that impairs liner performance;:
  3. Design the treatment wetland for optimum:
    - a. Sizing appropriate for the anticipated treatment,
    - b. Cell configuration,
    - c. Vegetative species composition, and
    - d. Berm configuration;:
  4. Construct and locate the treatment wetland so that it:
    - a. Maintains physical integrity during a 100-year, 24-hour storm event; and
    - b. Operates properly during a 25-year, 24-hour storm event;:
  5. Ensure that the bottom of the treatment wetland is at least 20 feet above the seasonal high groundwater table;: and
  6. If public access to the wetland is anticipated or encouraged, post signs at points of access and every 250 feet along the perimeter of the wetland stating, "CAUTION. THESE WETLANDS CONTAIN MINE DRAINAGE WATER. DO NOT DRINK." The permittee shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol.
- D. Operational requirements.
1. The permittee shall monitor the water leaving the wetlands at least quarterly for the standards specified in subsection (C)(1)(b). Monitoring shall include nutrients or other constituents used as indicators of wetland performance.
  2. The permittee shall submit to the Department and implement a Best Management Practices Plan for operation of the wetland. The Best Management Practices Plan shall include:
    - a. A site plan showing the wetland footprint, point of inflow, ~~storm water~~ stormwater drainage, and placement of vegetation;
    - b. A contingency plan to address problems, including treatment performance, wash-out and vegetation die-off, and a plan to apply for an individual permit if the wetland is unable to



- c. achieve the treatment standards in subsection (C)(1)(b) on a continued basis;
  - d. Management of flows into and through the wetland to minimize erosion and damage to vegetation;
  - e. A description of the measures for restricting access to the wetlands by the public;
  - f. A management plan for vector control; and
  - g. A plan or criteria for enhancing or supplementing wetland vegetation.
3. The permittee shall perform quarterly inspections to review the bank and liner integrity, erosion evidence, and the condition of signage and vegetation, and correct any problems noted.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built drawings, plans, if available; and
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.
- F. Reporting requirements.
1. If preliminary laboratory ~~result indicates~~ results indicate that the quality of the water leaving the wetlands does not meet the standards specified in subsection (C)(1)(b), the permittee may request that the laboratory re-analyze the sample before reporting the results to the Department. The permittee shall:
    - a. Conduct verification sampling within 15 days of receiving final laboratory results,
    - b. Conduct verification sampling only for parameters that are present in concentrations greater than the standards specified in subsection (C)(1)(b), and
    - c. Notify the Department in writing within five days of receiving final laboratory results.
  2. If the final laboratory result confirms that the quality of the water leaving the wetlands does not meet the standards in subsection (C)(1)(b), the permittee shall implement the contingency plan required by subsection (D)(2)(b) and notify the Department that the plan is being implemented.
  3. The permittee shall provide the Department with an annual assessment of the biological condition of the wetland, including the volume of inflow to the wetland in the past year.

**R18-9-D307. 3.07 General Permit: Tertiary Treatment Wetlands**

- A. A 3.07 General Permit allows constructed wetlands that receive with the intent to treat, discharges of reclaimed water that meet the secondary treatment level requirements specified in ~~R18-9-B204(B)(1)~~ R18-9-B204(B)(1).
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
1. The name and individual permit number of any facility that provides the reclaimed water to the wetland;
  2. The name and individual permit number of any facility that receives water released from the wetland;
  3. The design of the wetland construction and management project, including information on the quality of the influent, the treatment process, and the expected quality of the wastewater;
  4. A Best Management Practices Plan that includes:
    - a. A site plan showing the wetland footprint, point of inflow, ~~storm water~~ stormwater drainage, and placement of vegetation;
    - b. A contingency plan to address any problem~~s~~, including treatment performance, wash-out, and vegetation die-off;
    - c. A management plan for flows into and through the wetland to minimize erosion and damage to vegetation;
    - d. A description of the measures for restricting access to the wetlands by the public;
    - e. A management plan for vector control; and
    - f. A plan or criteria for enhancing or supplementing wetland vegetation.
- C. Design requirements. An applicant shall:
1. Release water from the wetland under an individual permit and a ~~National Pollution Discharge Elimination System~~ NPDES or AZPDES permit, if required. The applicant shall release water from the wetland only to a direct reuse site if the site is permitted to receive reclaimed water of the quality generated under the individual permit specified in subsection (B)(1);
  2. Construct and locate the treatment wetland so that it:
    - a. Maintains physical integrity during a 100-year, 24-hour storm event, and

- b. Operates properly during a 25-year, 24-hour storm event;
  3. Ensure that the bottom of the treatment wetland is at least 20 feet above the seasonal high groundwater table;
  4. Maintain a minimum horizontal separation of 100 feet between ~~any~~ a water supply well and the maximum wetted area of the wetland;
  5. ~~Maintain a minimum 1000 foot setback~~ the setbacks specified in R18-9-B201(I) for no noise, odor, or aesthetic controls between the property boundary at the site and the maximum wetted area of the wetland;
  6. Fence the wetland area to prevent unauthorized access;
  7. Post signs at points of access stating "CAUTION. THESE WETLANDS CONTAIN RECLAIMED WATER, DO NOT DRINK." The applicant shall ensure that the signs are in English and Spanish, or in English with inclusion of the international "do not drink" symbol;
  8. Construct the treatment wetland with a liner using low hydraulic conductivity artificial liner material, site-specific liner material, or both, to achieve a calculated seepage rate of less than 550 gallons per acre per day. The applicant shall:
    - a. Ensure that if an artificial liner material is used, such as geomembrane, the material is underlain by at least ~~six~~ 6 inches of prepared and compacted subgrade;
    - b. Anchor the liner along the perimeter of the wetland; and
    - c. Manage the plants in the wetland to prevent species with root penetration that impairs liner performance;
  9. Calculate the size and depth of the wetland so that the rate of flow allows adequate treatment detention time. The applicant shall design the wetland with at least two parallel treatment cells to allow for efficient system operation and maintenance;
  10. Ensure that the wetland vegetation includes cattails, bulrush, common reed, or other species of plants with high pollutant treatment potential to achieve the intended water quality identified in subsection (B)(3); and
  11. Ensure that construction and operation of the wetlands is consistent with local zoning and land use requirements.
- D. Operational requirements. The permittee shall:
1. Implement an approved Best Management Practices Plan;
  2. Monitor wastewater leaving the treatment wetland to ensure that discharge water quality meets the intended treatment specified in subsection ~~(A)(3)~~ R18-9-B204(C)(1). The permittee shall ensure that analyses of wastewater samples are conducted by a laboratory certified by the Department of Health Services, following the Department's Quality Assurance/Quality Control requirements;
  3. Follow the prescribed measures as required in the contingency plan under subsection (B)(4)(b) and report to the Department within five days if verification sampling demonstrates that an alert level or discharge limit is exceeded;
  4. Inspect the wetlands at least quarterly for bank and liner integrity, erosion evidence, and condition of signage and vegetation, and correct any problem discovered; and
  5. Ensure that the wetland is operated by a certified operator.
- E. Recordkeeping. A permittee shall maintain the following information for at least 10 years and make it available to the Department upon request:
1. Construction drawings and as-built ~~drawings~~ plans, if available; and
  2. A log book or similar documentation to record inspection results, repair and maintenance activities, monitoring results, and facility closure.
- F. Reporting requirements. The permittee shall provide the Department with an annual assessment of the biological condition of the wetland including the volume of inflow to the wetland in the past year.

## PART E. TYPE 4 GENERAL PERMITS

### **R18-9-E301. 4.01 General Permit: Sewage Collection Systems**

- A. A 4.01 General Permit allows a new sewage collection system or an expansion of an existing sewage collection system involving new construction to operate if the system
1. ~~A sewer collection system includes all sewer lines and associated structures, devices, and appurtenances that:~~
    - a. ~~Are owned or controlled by a public or private sewer utility extending from the treatment~~

- ~~works to the upstream points in the system where private owners assume ownership or control; or~~
- b. ~~Serve multiple private users from the upstream points where the individual users assume ownership or control to the downstream point where the sewer delivers wastewater to a sewage collection system owned or controlled by a public or private sewer utility, or to a sewage treatment facility.~~
2. ~~A sewer collection system repair is not an expansion of the system that requires a Notice of Intent to Discharge. Repairs include work performed in response to deterioration of existing structures, devices, and appurtenances with the intent to maintain or restore the system to its original operational characteristics.~~
1. Serves downstream from the point where the diameter of the sewer line pipe increases from less than 8 inches to 8 inches or more;
2. Includes a manhole, or a force main or small diameter sewer serving more than one dwelling; or
3. Is located on a public right-of-way or easement.
- B. Performance. An applicant shall design, construct, and operate a sewage collection system so that it:
1. Provides adequate wastewater flow capacity for the planned service area;
  2. Minimizes sedimentation, blockage, and erosion through maintenance of proper flow velocities throughout the system;
  3. Prevents ~~sanitary sewer overflows~~ releases of sewage to the land surface through appropriate sizing, capacities, and inflow and infiltration prevention measures throughout the system;
  4. Protects water quality through minimization of exfiltration losses from the system;
  5. Provides for adequate inspection, maintenance, testing, visibility, and accessibility; ~~and~~
  6. Maintains system structural integrity; ~~and~~
  7. Minimizes septic conditions in the sewage collection system.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit the following information:
1. ~~A statement, signed by the owner or operator of the sewage treatment facility that treats or processes the sewage from the proposed sewer collection system.~~
    - a. ~~The owner or operator shall affirm that the additional volume of wastewater delivered to the facility by the proposed sewer collection system will not cause any flow or effluent quality limits of the individual permit for the facility to be exceeded.~~
    - b. ~~If the facility is classified as a groundwater protection permit facility under A.R.S. § 49-241.01(C), or if no flow or effluent limits are applicable, the owner or operator shall affirm that the design flow of the facility will not be exceeded.~~

A capacity assurance form, provided by the Department, signed by the owner or operator of the first downstream sewage collection system or receiving sewage treatment facility affirming that the downstream system or facility can receive the sewage from the proposed sewage collection system without exceeding the design flow or violating any statute, rule, or permit condition applicable to the downstream system or facility;
  2. ~~If the proposed sewage collection system delivers wastewater to a downstream sewer collection system under different ownership or control, a statement, signed by the owner or operator of the downstream sewer collection system, affirming that the downstream system can maintain the performance required by subsection (B) if it receives the increased flows associated with the new system or the expansion;~~
  3. ~~2.~~ A general site plan showing the boundaries and key aspects of the project;
  4. ~~3.~~ Construction quality drawings that provide overall details of the site and the engineered works comprising the project including:
    - a. Relevant plans and profiles of sewer lines, force mains, manholes, and lift stations with sufficient detail to allow Department verification of design and performance characteristics;
    - b. Relevant cross sections showing construction details and elevations of key components of the ~~sewer~~ sewage collection system to allow Department verification of design and performance characteristics, including the slope of each gravity sewer segment stated as a percentage; and
    - c. Drainage features and controls, and erosion protection as applicable, for the components of the project.
  5. ~~4.~~ Documentation of design flows for significant components of the sewage collection system and the basis for calculating the design flows;

- 6.5. An operation and maintenance plan ~~if the project has a design flow of more than 10,000 gallons per day;~~
  - 7.6. Drawings, reports, and other information that are clear, reproducible, and in a size and format specified by the Department. The applicant may submit the drawings in a Department-approved electronic format; and
  - 8.7. Design documents, including plans, specifications, drawings, reports, and calculations that are signed, dated, and sealed by an Arizona-registered professional engineer ~~unless prohibited by law~~. The designer shall use good engineering ~~judgement~~ judgment following engineering standards of practice, and rely on appropriate engineering methods, calculations, and guidance.
- D. Design requirements.
1. General Provisions. ~~An applicant shall ensure that the design, installation, and testing of a new sewage collection system or an expansion to an existing sewage collection system involving new construction complies with the following rules. An applicant shall design and construct a new sewage collection system, or an expansion of an existing sewage collection system involving new construction, according to the requirements of this general permit to meet the performance standards specified in subsection (B). An applicant shall~~
    - a. ~~Base design flows for components of the system on unit flows specified in Table 1, Unit Daily Design Flows. If documented by the applicant, the Department may accept lower unit flow values in the served area due to significant use of low flow fixtures.~~
    - b. ~~Use the "Uniform Standard Specifications for Public Works Construction," referenced in this Section and published by the Maricopa Association of Governments, revisions through 2000, or the "Pima County Wastewater Management," November 1994 Edition, as the applicable design and construction criteria, unless the Department approved alternative design standards or specifications authorized by a delegation agreement under A.R.S. § 49-107.~~
    - c.a. ~~Use gravity sewer lines, if appropriate. Base design flows for components of the system on unit flows specified in Table 1, Unit Daily Design Flows. The applicant shall design gravity sewer lines and all other sewer sewage collection system components, including force mains, manholes, lift stations greater than 600 dwelling units (d.u.), and appurtenant devices and structures to accommodate maximum sewage flows as determined by one of the method following methods specified in subsections (D)(1)(C)(i) or (D)(1)(C)(ii) that yields the greatest calculated flow. If documented by the applicant, the Department may accept lower unit flow values in the served area due to significant use of low flow fixtures., hydrographs of actual flows, or other factors.~~
      - i. Any point in a sewer main when flowing full can accommodate ~~an average flow of 100 gallons per capita per day for all populations upstream from that point, or a peak wet weather flow calculated by multiplying the sum of the flows from Table 1, Unit Daily Design Flows by the peaking factor, as tabulated below, and adding a wet weather infiltration and inflow rate based on either a percentage of peak dry weather flow or a gallons per acre rate of flow;~~
      - ii. Any point in a sewer collection system can accommodate a peak flow for all populations upstream from that point as tabulated below:

Upstream Population	Peaking Factor
100	3.62
200	3.14
300	2.90
400	2.74
500	2.64
600	2.56

700	2.50
800	2.46
900	2.42
1000	2.38
1001 to 10,000	$PF = (6.330 \times p^{-0.231}) + 1.094$
10,001 to 100,000	$PF = (6.177 \times p^{-0.233}) + 1.128$
More than 100,000	$PF = (4.500 \times p^{-0.174}) + 0.945$

PF = Peaking Factor

p = Upstream Population

- ii. Design any lift station or force main using the criteria in subsection (D)(1)(C)(i) to convey both the peak dry weather flow and the wet weather infiltration and inflow rate based on either a percentage of peak dry weather flow or a gallons per acre rate of flow. The total inflow shall discharge through the force main at a velocity that does not exceed 7 feet per second using the primary pump without resorting to a backup or secondary pump;
  - b. Use the "Uniform Standard Specifications for Public Works Construction," referenced in this Section and published by the Maricopa Association of Governments, revisions through 2000, or the Standard Specifications for Public Improvements," November 1994 Edition, published jointly by Pima County and the City of Tucson, as the applicable design and construction criteria, unless the Department approves alternative design standards or specifications;
  - c. For a lift station serving up to 600 d.u., use the following methods to size the pumps making an allowance for wet weather infiltration and inflow, if applicable:
    - i. Peak dry weather flow = 17 d.u.<sup>0.42</sup>, or
    - ii. Peak dry weather flow = 11.2 (population)<sup>0.42</sup>;
  - d. Ensure the separation of sewage collection system components from drinking water distribution system components under R18-4-502; and
  - e. Request review and approval of an alternative to a design feature specified in this Section by following the requirements of R18-9-A312(G).
2. Gravity sewer lines. An applicant shall:
- a. Ensure that any sewer line that runs between manholes, if not straight, is of constant horizontal curvature with a radius of curvature not less than 200 feet;
  - b. Cover each sewer line with at least ~~three~~ 3 feet of backfill meeting the requirements of subsection (D)(2)(h)(i). ~~The applicant shall; and~~
    - i. Include at least one note specifying this requirement in construction plans;
    - ii. If site-specific limitations prevent ~~three~~ 3 feet of earth cover, provide the maximum cover attainable, and construct the sewer line of ductile iron pipe or other materials of equivalent or greater tensile and compressive strength, and note the change in construction plans;
    - iii. If ductile iron pipe is not used, design and construct the sewer line pipe with restrained joints ~~or an equivalent feature~~; and
    - iv. Ensure that the design of the pipe and joints can withstand crushing or shearing from any expected load. Construction plans shall note locations requiring these measures;
  - c. If sewer lines cross floodways, place the lines at least ~~two~~ 2 feet below the 100-year storm scour depth and construct the lines using ductile iron pipe or pipe with equivalent tensile strength, compressive strength, shear resistance, and scour protection. The applicant shall ensure that sewer lines constructed in this manner extend at least 10 feet beyond the boundary of the 100-year storm scouring. Construction plans shall note locations requiring these measures;
  - d. Ensure that each sewer line is ~~eight~~ 8 inches in diameter or larger except:

- i. ~~The the~~ first 400 feet of a dead end sewer line with no potential for extension may be ~~six 6~~ inches in diameter if the design flow criteria specified in subsection (D)(1)(C) are met. If the line is ~~ever~~ extended, the applicant seeking the extension shall replace the entire length with larger pipe to accommodate the new design flow; ~~or~~
  - ii. ~~The sewer lines for a sewage collection system for a manufactured home, mobile home, or recreational vehicle park are not less than four inches in diameter for up to 20 units, five inches in diameter for 21 to 36 units, and six inches in diameter for 37 to 60 units.~~
- e. Design sewer lines with at least the minimum slope calculated from Manning's Formula using a coefficient of roughness of 0.013 and a sewage velocity of ~~two 2~~ feet per second when flowing full.
- i. An applicant may request a smaller minimum slope under R18-9-A312(G) if the smaller slope is justified by a quarterly program of inspections, flushings, and cleanings.
  - ii. If a smaller minimum slope is requested, the applicant shall not design the slope shall ~~not be~~ less than 50% percent of that calculated from Manning's formula using a coefficient of roughness of 0.013 and a sewage velocity of ~~two 2~~ feet per second.
  - iii. The ratio of flow depth in the pipe to the diameter of the pipe shall not exceed 0.75 in peak dry weather flow conditions;
- f. Design sewer lines to avoid a slope that creates a sewage velocity greater than 10 feet per second. The applicant shall construct any sewer line carrying a flow with a normal velocity of greater than 10 feet per second using ductile iron pipe or pipe with equivalent erosion resistance, and structurally reinforce the receiving manhole or sewer main.;
- g. Design and install sewer lines, connections, and fittings with materials that meet or exceed manufacturer's specifications ~~not inconsistent~~ consistent with this Chapter to:
- i. Limit inflows, infiltration, and exfiltration;
  - ii. Resist corrosion in the project electrochemical environment;
  - iii. Withstand anticipated live and dead loads; and
  - iv. Provide internal erosion protection.;
- h. Indicate trenching and bedding details applicable for each pipe material and size in the design plans. ~~Sewer~~ The applicant shall place and bed the sewer lines shall be placed in trenches ~~and bedded~~ following the specifications established in subsections (D)(2)(h)(i) and ~~(D)(2)(h)(ii)~~ (ii), unless the Department approved alternative design standards or specifications under subsection (D)(1)(b). This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State,~~ or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-1207.
- i. "Trench Excavation, Backfilling, and Compaction" (Section 601), published in the "Uniform Standard Specifications for Public Works Construction," published by the Maricopa Association of Governments, revisions through 2000; and
  - ii. "Rigid Pipe Bedding for Sanitary Sewers" (WWM 104), and "Flexible Pipe Bedding for Sanitary Sewers" (WWM 105), published by Pima County Wastewater Management, revised November 1994.;
- i. Perform a deflection test of the total length of all sewer lines made of flexible materials to ensure that the installation meets or exceeds the manufacturer's recommendations and record the results.;
- j. Test each segment of the sewer line for leakage using the applicable method below and record the results:
- i. "Standard Test Method for Installation of Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air" published by the American Society for Testing and Materials, (F1417-92), reapproved 1998;
  - ii. "Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method" published by the American Society for Testing and Materials, ~~(C 924-89),~~

- iii. ~~reapproved 1997 (C-924-02), reapproved 2002;~~ “Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines” published by the American Society for Testing and Materials, ~~(C-828-98), approved March 10, 1998 (C-828-01), reapproved 2001; or~~
- iv. “Standard Test Method for Hydrostatic Infiltration and Exfiltration Testing of Vitrified Clay Pipe Lines” published by the American Society for Testing Materials (C1091-02), reapproved 2002;
- v. “Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines” published by the American Society for Testing Materials (C969-02), reapproved 2002; or
- vi. “Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications” published by the American Society for Testing Materials (D2321-00), reapproved 2000; or
- ~~iv-vii.~~ The material listed in subsections (D)(2)(j)(i), (D)(2)(j)(ii), and (D)(2)(j)(iii) through (vi) is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental, 1110 W. Washington, Phoenix, AZ 85007 and the Office of the Secretary of State, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959;
- k. Test the total length of the sewer line for uniform slope by lamp lighting, remote camera or similar method approved by the Department, and record the results;
- l. Limit the planting of vegetation within the disturbed area of new sewage collection system construction to plant species having roots that are not likely to reach and damage the sanitary sewer, or adversely impair the operation of the sewer or visual and vehicular access to manholes;

3. Manholes.

- a. An applicant shall install manholes at all grade changes, ~~all~~ size changes, ~~all~~ and alignment changes in lines, all sewer ~~intersections~~ intersections, and at any location necessary to comply with the following spacing requirements:

Sewer Pipe Diameter (inches)	Maximum Manhole Spacing (feet)
4 to less than 8	<del>300</del> 400
8 to less than 18	500
18 to less than 36	600
36 to less than 60	800
60 or greater	1300

- b. The Department shall allow greater manhole spacing following the procedure provided in R18-9-A312(G) if documentation is provided showing the operator possesses or has available specialized sewer cleaning equipment suitable for the increased spacing.
- c. The applicant shall ensure that manhole design is consistent with “Pre-cast Concrete Sewer Manhole” (#420), “Offset Manhole for 8” - 30” Pipe” (#421), and “Brick Sewer Manhole and Cover Frame Adjustment” (#422), 1998, including revisions through 2000, published by the Maricopa Association of Governments; and “Manholes and Appurtenant Items” (WWM 201 through WWM 211), Standard Details for Public Improvements, 1994 Edition, published by Pima County Wastewater Management.
- d. ~~The~~ This material ~~specified in subsection (D)(3)(c)~~ is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental, 1110 W. Washington, Phoenix, AZ 85007 and the Office of the Secretary of State, or may be obtained from the Maricopa Association of Governments, 302 N. 1st Avenue, Suite 300, Phoenix, Arizona 85003, or from Pima County Wastewater Management, 201 N. Stone Avenue, Tucson, Arizona 85701-1207.

- e.d. The applicant shall not locate manholes in areas subject to more than incidental runoff from rain falling in the immediate vicinity unless the manhole cover assembly is designed to restrict or eliminate ~~storm water~~ stormwater inflow.
  - f.e. The applicant shall test all manholes using one of the following test protocols:
    - i. Watertightness testing by filling the manhole with water. The applicant shall ensure that the drop in water level following presoaking does not exceed 0.001 of total manhole volume in one hour;
    - ii. Air pressure testing using the “Standard Test Method for Concrete Sewer Manholes by Negative Air Pressure (Vacuum) Test,” published by the American Society for Testing and Materials, (C 1244-93), approved August 15, 1993. This material is incorporated by reference, does not include any later amendments or editions of the incorporated ~~matter, material and is on file with the Office of the Secretary of State. The material~~ may be viewed at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 Water Quality Division, or obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959;
    - iii. Holiday testing of lined manholes using the “Standard Test Methods for Holiday Detection in Pipeline Coatings<sup>1</sup>,” (G 62-87(2000)e1), reapproved 2000, published by the American Society for Testing and Materials. This material is incorporated by reference, does not include any later amendments or editions of the incorporated material and may be viewed at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959. The applicant shall test at least 1/3 of the manholes using one of the protocols specified in subsections (D)(3)(e)(i) and (D)(3)(e)(ii).
  - ~~g.f.~~ The applicant shall perform manhole testing under subsection ~~(D)(3)(f)~~ (D)(3)(e) after installation of the manhole cone to verify watertightness of the manhole from the top of the cone down.
    - i. Upon satisfactory test results, the applicant shall install the manhole ring and any spacers, complete the joints, and seal the manhole to a watertight condition.
    - ii. If the applicant can install the manhole cone, spacers, and ring ~~can be installed~~ to final grade without disturbance or adjustment by later construction, the applicant may perform the testing from the top of the manhole ring on down.
  - ~~h.g.~~ The applicant shall locate a manhole to provide adequate visibility and vehicular maintenance accessibility ~~after the manhole has been built~~ following construction.
4. Force mains and small diameter sewers. ~~If it is impractical to~~ An applicant may install a ~~gravity sewer line system force main or small diameter sewer, an applicant may install a force main~~ if it meets the following design, installation, and testing requirements. The applicant shall:
- a. Design force mains to maintain a minimum flow velocity of ~~three~~ 3 feet per second and a maximum flow velocity of ~~seven~~ 7 feet per second. The applicant may design for sustained periods of flow above 7 feet per second, if the applicant justifies the design using the process specified in R18-9-A312(G);
  - ~~b.~~ Design small diameter sewers to maintain a minimum flow velocity of 2 feet per second and a maximum flow velocity of 7 feet per second;
  - ~~b.c.~~ Ensure that force mains have the appropriate valves and controls required to prevent drainback to the lift station. If drainback is necessary during cold weather to prevent freezing, the control system may allow manual or automatic drainback;
  - ~~e.d.~~ Incorporate air release valves or other appropriate components in force mains at all high points along the line to eliminate air accumulation. If engineering calculations provided by the applicant demonstrate that air will not accumulate in a given high point under typical flow conditions, the Department shall waive the requirement for an air release valve;
  - ~~d.e.~~ Provide Design force mains, thrust blocks, or restrained joints to accommodate water hammer potential and surge control measures if needed to ~~an analysis shows the need to prevent excessive movement of the force main. Construction Submitted construction~~ plans shall show thrust block or restrained joint locations and details; ~~The documentation submitted to the Department for verification of the general permit shall include calculations and analysis of~~



~~water hammer potential and surge control measures and shall be signed and sealed by an Arizona registered professional engineer.~~

- e.f. If a force main is proposed to discharge directly to a sewage treatment facility without entering a flow equalization basin, include in the Notice of Intent to Discharge a statement from the owner or operator of the sewage treatment facility that the design is acceptable;
- f.g. Design a force main to withstand, and upon completion test the force main for leakage, at a pressure of 50 pounds per square inch or more above the design working pressure; and
- g.h. Supply flow to a force main using a lift station that meets the requirements of subsection (D)(5).

5. Lift stations. An applicant shall:

- a. Secure a lift station to prevent tampering and affix on its exterior, or on the nearest vertical object if the lift station is entirely below grade, at least one warning sign that includes the 24-hour emergency phone number of the owner or operator of the collection system;
- b. Protect lift stations from physical damage from a 100-year flood event. Construction of a lift station is prohibited in a floodway;
- c. Lift station wet well design. ~~The applicant shall:~~
  - i. Ensure that the minimum wet well volume in gallons ~~shall be~~ is 1/4 of the product of the minimum pump cycle time, in minutes, and the total pump capacity, in gallons per minute;
  - ii. Protect the wet well against corrosion to provide at least a 20-year ~~design~~ operational life;
  - iii. Ensure that wet well volume does not allow the sewage retention time to exceed 30 minutes unless the sewage is aerated, chemicals are added to prevent or eliminate hydrogen sulfide formation, or adequate ventilation is provided. Notwithstanding these measures, the applicant shall not allow the septic condition of the sewage to adversely affect downstream collection systems or sewage treatment facility performance;
  - iv. Ensure that excessively high or low levels of sewage in the wet well trigger an audible or visual alarm at the wet well site and at the system control center; and
  - v. Ensure that a wet well designed to accommodate more than 5000 gallons per day has a horizontal ~~open~~ cross-sectional area of at least 20 square feet;
- d. Equip a lift station wet well with at least two pumps. The applicant shall ensure that:
  - i. The pumps are capable of passing a 2.5-inch sphere or are grinder pumps;
  - ii. The lift station is capable of operating at design flow with any one pump out of service; and
  - iii. Piping, valves, and controls are arranged to allow independent operation of each pump;
- e. Not use suction pumps if the sewage lift is more than 15 feet. The applicant shall ensure that other types of pumps are self-priming and that pump water brake horsepower is at least 0.00025 times the product of the required discharge, in gallons per minute, and the required total dynamic head, in feet;
- f. For safety during operation and maintenance, ~~design lift stations to conform with~~ follow all applicable state and federal confined space entry requirements; and
- g. For lift stations receiving an average flow of more than 10,000 gallons per day, include a standby power source in the lift station design that ~~may be put into~~ will provide immediate service ~~immediately~~ and remain available for 24 hours per day.

E. ~~Additional Verification of General Permit Conformance~~ Discharge Authorization requirements. An applicant shall:

- 1. Supply a signed, dated, and sealed Engineer's Certificate of Completion, ~~unless prohibited by law~~, in a format approved by the Department that provides the following:
  - a. Confirmation that the project was completed in compliance with the requirements of this Chapter, as described in the plans and specifications corresponding to the ~~Provisional Verification of General Permit Conformance~~ Construction Authorization issued by the Director, or with changes that are reflected in as-built plans submitted with the Engineer's Certificate of Completion;
  - b. As-built plans, if required, that are properly identified and numbered; and
  - c. Confirmation of satisfactory test results from deflection, leakage, and uniform slope testing.

2. Provide any other relevant information required by the Department to determine that the facility conforms to the terms of this general permit; and
  3. ~~If the project has a design flow of more than 10,000 gallons per day, provide~~ Provide a final operation and maintenance plan that includes the 24-hour emergency number of the owner or operator of the system.
- F. Operation and maintenance requirements. The permittee shall:
1. ~~The permittee of a sewage collection system that includes a force main and lift station or that has a design flow of more than 10,000 gallons per day shall maintain, and revise as needed, an operation and maintenance plan for the system at the system control center.~~
  2. ~~The permittee shall ensure that the operation and maintenance plan is the basis for operation and continuing maintenance of the sewer collection system.~~
  1. Operate the new sewage collection system or expansion of an existing sewage collection system involving new construction under the operation and maintenance plan specified in subsection (E)(3), to meet the performance standards specified in subsection (B), unless the permittee is operating the sewage collection system under a CMOM Plan under the general permit established in R18-9-C305.
  2. Ensure that the sewage collection system is operated by a person certified under A.A.C. R18-5-105 for the grade of the system.
- G. Recordkeeping. A person operating or owning a facility permitted under R18-9-E301 shall maintain the documents listed in subsection (E) for the life of the facility and make them available to the Department upon request.
- H. Repairs. A repair to a sewage collection system does not require submittal of a Notice of Intent to Discharge. Repairs include work performed in response to deterioration of existing structures, devices, and appurtenances with the intent to maintain or restore the system to its original design flow and operational characteristics.

**R18-9-E302. 4.02 General Permit: Septic Tank ~~With~~ with Disposal by Trench, Bed, Chamber Technology, or Seepage Pit, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.02 General Permit allows for a system consisting of a septic tank dispensing wastewater to an approved means of disposal described in this Section. Only gravity flow of wastewater from the septic tank to the disposal ~~field~~ works is authorized by this general permit.
1. The standard septic tank and disposal ~~field~~ works design specified in this general permit ~~is intended to serve most~~ serves sites where no site limitations are identified by the site investigation conducted under R18-9-A310.
  2. If site conditions allow, this general permit authorizes the discharge of wastewater from a septic tank meeting the requirements of R18-9-A314 to one of the following disposal ~~fields~~ works:
    - a. ~~Shallow trench~~ Trench,
    - b. ~~Deep trench~~,
    - e.b. Bed,
    - d.c. ~~Disposal field using chamber~~ Chamber technology, or
    - e.d. Seepage pit.
- B. Performance. An applicant shall design a system consisting of a septic tank and one of the disposal ~~fields~~ works listed in subsection (A)(2) on the basis that treated wastewater released to the native soil meets the following criteria:
1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 150 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
  4. Total coliform level of 100,000,000 (Log<sub>10</sub> 8) colony forming units per 100 milliliters, 95th percentile.
- C. Design and installation requirements.
1. General provisions. The applicant shall:
    - a. Ensure that the septic tank meets the requirements specified in R18-9-A314;
    - b. Before placing aggregate or ~~drain lines~~ disposal pipe in a prepared excavation, remove all smeared or compacted surfaces from trenches by raking to a depth of ~~one~~ 1 inch and removing loose material. The applicant shall:
      - i. Place aggregate in the trench to the depth and grade specified in subsection (C)(2);
      - ii. Place the drain pipe on aggregate and cover it with aggregate to the minimum depth

- iii. Cover the aggregate with landscape filter material, geotextile, or similar porous material to prevent filling of voids with earth backfill;
  - c. Use a grade board stake placed in the trench to the depth of the aggregate if the ~~distribution line~~ disposal pipe is constructed of drain tile or flexible pipe that will not maintain alignment without continuous support;
  - d. Disposal pipe.
    - i. If two or more ~~drain lines~~ disposal pipes are installed, install a distribution box approved by the Department of sufficient size to receive all lateral lines and flows at the head of each disposal ~~field works and.~~ The applicant shall:
      - i. (1) Ensure that the inverts of all outlets are level and the invert of the inlet is at least ~~one~~ 1 inch above the outlets;
      - ii. (2) Design distribution boxes to ensure equal flow and install the boxes on a stable level surface such as a concrete slab or native or compacted soil; and
      - iii. (3) Protect concrete distribution boxes from corrosion by coating them with an appropriate bituminous coating, constructing the boxes with concrete that has a 15 to 18% percent fly ash content, or by using other allowable means.
    - ii. The applicant may substitute a "T" for a distribution box when the flow is distributed within a disposal works with not more than two disposal pipes and hydraulic performance is equivalent to the distribution box;
  - e. Construct all lateral pipes running from a distribution box to the disposal ~~field works~~ with watertight joints and ensure that multiple disposal ~~field~~ laterals, wherever practical, are of uniform length;
  - f. Lay pipe connections between the septic tank and a distribution box on natural ground or compact fill and construct the pipe connections with watertight joints;
  - g. Construct steps within distribution line trenches or beds, if necessary, to maintain a level disposal pipe on sloping ground. The applicant shall construct the lines between each horizontal section ~~shall be constructed~~ with watertight joints and ~~installed~~ install them on natural or unfilled ground; and
  - h. Ensure that a disposal ~~field works~~ consisting of trenches, beds, chamber technology, or seepage pits is not paved over or covered by concrete or any material that can reduce or inhibit possible evaporation of wastewater through the soil to the land surface or oxygen transport to the soil absorption surfaces.
2. ~~Shallow and deep trenches~~ Trenches.
- a. The applicant ~~may, in computing the trench bottom absorption, include a trench sidewall area between 12 and 36 inches below the distribution line~~ shall calculate trench absorption area as the total of the trench bottom area and the sum of both trench sidewall areas downward from a point 1 foot below the bottom of the disposal pipe.
  - b. The applicant shall ensure that trench bottoms and disposal pipe are level. The applicant shall calculate trench sizing ~~for shallow and deep trenches~~ from the soil absorption rate specified under R18-9-A312(D) and the design flow established in R18-9-A312(B).
  - c. The following design criteria for ~~shallow and deep~~ trenches apply:

<del>Shallow and Deep</del> Trenches	Minimum	Maximum
1. Number of trenches	1 (2 are recommended)	—
2. Length of trench	—	100 feet
3. Bottom width of trench	12 inches	36 inches
4. Depth of trench (from land surface)	—	9 feet
5. <u>Trench absorption area (sq. ft. of absorption area per linear foot of trench)</u>	—	<u>11 sq. ft.</u>

6. <u>Depth of cover over <del>distribution</del> aggregate surrounding disposal pipe</u>	9 inches	24 inches <sup>1</sup>
7. <u>Thickness of aggregate material over disposal pipe</u>	<u>2 inches</u>	<u>2 inches</u>
8. <u>Thickness of <del>Aggregate</del> aggregate material under disposal pipe</u>	12 inches	—
<u>Aggregate material over pipe</u>	<u>2 inches</u>	<u>2 inches</u>
9. Slope of <u><del>distribution</del> disposal pipe</u>	Level	Level
10. <u>Distribution Disposal pipe diameter</u>	3 inches	4 inches
11. <u>Spacing of <del>distribution pipe</del> trenches (measured between nearest sidewalls)</u>	2 times <del>effective</del> depth <sup>2</sup> or five feet, whichever is greater	—

Notes:

1. For more than 24 inches, SDR Standard Dimensional Ratio 35 or equivalent strength pipe is required.
2. The distance between the bottom of the disposal pipe and the bottom of the trench ~~bed~~.

d. The applicant may substitute clean, durable, crushed and washed recycled concrete for aggregate if noted in design documents and the trench absorption area calculation excludes the trench bottom..

3. Beds. An applicant shall:

- a. If a bed is installed ~~instead of a trench, ensure that the area of each bed is at least 50% greater than the tabular dimensions required for a trench, use the soil absorption rate specified in R18-9-A312(D) for "SAR, Bed."~~ The applicant may, in computing the bed bottom absorption area, include ~~a the bed bottom and the perimeter sidewall area between 12 and 36 inches below the disposal line pipe;~~
- b. ~~Ensure that the bottom of a bed is level and calculate bed sizing from the soil absorption rate as specified by R18-9-A312(D).~~
- e.b. The following design criteria for beds apply: Comply with the following design criteria for beds:

<b>Gravity Beds</b>	<b>Minimum</b>	<b>Maximum</b>
1. Number of <u><del>distribution</del> disposal pipes</u>	2	—
2. Length of bed	—	100 feet
3. Distance between <u>disposal pipes</u>	4 feet	6 feet
4. <u>Spacing of beds measured between nearest sidewalls</u>	<u>2 times depth<sup>1</sup> or 5 feet, whichever is greater</u>	—
5. Width of bed	10 feet	12 feet
6. Distance from <u>disposal pipe to sidewall</u>	3 feet	3 feet
7. Depth of cover over <u>disposal pipe</u>	9 inches	14 inches
8. <u>Thickness of <del>Aggregate</del> aggregate material under disposal pipe</u>	12 inches	—
9. <u>Thickness of <del>Aggregate</del> aggregate material over disposal pipe</u>	2 inches	2 inches
10. Slope of <u><del>distribution</del> disposal pipe</u>	Level	Level
11. <u>Distribution Disposal pipe diameter</u>	3 inches	4 inches

1. For more than 24 inches, Standard Dimensional Ratio 35 or equivalent strength pipe is required.

4. ~~Disposal field using chamber~~ Chamber technology. An applicant shall:
- a. ~~If leaching chambers are proposed instead of trenches or beds installed with distribution pipes, calculate~~ Calculate an equivalent effective chamber absorption area to size the disposal field works area and determine the number of chambers needed. The effective absorption area of each chamber is calculated as follows:
 
$$A = (1.43 \times B \times L) + (2 \times V \times L)$$
    - i. "A" is the effective absorption area of each chamber,
    - ii. "B" is the nominal width of the open bottom absorption surface of the chamber,
    - iii. "V" is the vertical height of the louvered sidewall of the chamber ~~sidewall~~, and
    - iv. "L" is the length of the chamber;
  - b. Calculate the disposal field works size and number of chambers from the effective absorption area of each chamber and the soil absorption rates specified in R18-9-A312(D), ~~taking care to use the appropriate value, depending on whether the proposed chamber installation is shallow or deep. Example calculations for effective chamber absorption area, disposal field size, and number of required chambers are on file with the Department;~~
  - c. Ensure that the sidewall of the chamber provides at least 35% percent open area for sidewall credit and that the design and construction minimizes the movement of fines into the chamber area. The use of filter fabric or geotextile against the sidewall openings is prohibited.
5. Seepage pits. The applicant shall:
- a. ~~If allowed by R18-9-A311, design~~ Design a seepage pit to comply with R18-9-A312(E)(1) for minimum vertical separation distance;
  - b. Ensure that multiple seepage pit installations are served through a distribution box approved by the Department or connected in series with a watertight connection laid on undisturbed or compacted soil. The applicant shall ensure that the outlet from the pit has a sanitary tee with the vertical leg extending at least 12 inches below the inlet;
  - c. Ensure that each seepage pit is circular and has an excavated diameter of ~~four 4~~ to six 6 feet. If multiple seepage pits are installed, ensure that the minimum spacing between seepage pit sidewalls is 5 feet. The applicant may use the alternative design procedure specified in R18-9-A312(G) for a proposed seepage pit more than ~~six 6~~ feet in diameter;
  - d. For a gravel filled seepage pit, backfill the entire pit with aggregate. The applicant shall ensure that each pit has a breather conductor pipe that consists of a perforated pipe at least ~~four 4~~ inches in diameter, placed vertically within the backfill of the pit. The pipe shall extend from the bottom of the pit to within 12 inches below ground level;
  - e. For a lined, hollow seepage pit, lay a concrete liner or a liner of a different approved material in the pit on a firm foundation and fill excavation voids behind the liner with at least ~~nine 9~~ inches of aggregate;
  - f. For the cover of a lined seepage pit use an approved one or two piece reinforced concrete slab with a minimum compressive strength of 2500 pounds per square inch. The applicant shall ensure that the cover:
    - i. Is at least ~~five 5~~ 5 inches thick and designed to support an earth load of at least 400 pounds per square foot;
    - ii. Has a 12 inch square or diameter minimum access hole with a plug or cap that is coated on the underside with an approved bituminous seal, constructed of concrete with 15% percent to 18% percent fly ash content, or made of other nonpermeable protective material; and
    - iii. Has a ~~four 4~~ inch or larger inspection pipe placed vertically not more than six 6 inches below ground level;
  - g. Ensure that the top of the seepage pit cover is ~~four 4~~ to 18 inches below the surface of the ground;
  - h. Install a vented inlet fitting in every seepage pit to prevent flows into the seepage pit from damaging the sidewall.
    - i. An applicant may use a 1/4 bend fitting placed through an opening in the top of the slab cover if a one or two piece concrete slab cover inlet is used; ~~or~~
    - ii. ~~For multiple seepage pit installations, an applicant shall install the outlet fittings following a reference design drawing on file with the Department.~~
  - i. Bore seepage pits five feet deeper than the proposed pit depth to verify underlying soil

characteristics and backfill the five feet of overdrill with low permeability drill cuttings or other suitable material;

- j. Backfill seepage pits that terminate in gravelly, coarse sand zones five feet above the beginning of the zone with low permeability drill cuttings or other suitable material;
- k. determine the minimum sidewall area for a seepage pit from the design flow and the soil absorption rate derived from the testing procedure described in ~~R18-9-A310(F)~~ R18-9-A310(G). The effective absorption surface for a seepage pit is the sidewall area only. The sidewall area is calculated ~~by~~ using the following formula:

$$A = 3.14 \times D \times H$$

- i. "A" is the minimum sidewall area in square feet needed for the design flow and soil absorption rate for the installation,
- ii. "D" is the diameter of the proposed seepage pit in feet, and
- iii. "H" is the vertical height in feet in the seepage pit through which wastewater infiltrates native soil. The applicant shall ensure that H is at least 10 feet for any seepage pit.

D. Operation and maintenance. The permittee shall follow the applicable operation and maintenance requirements in R18-9-A313.

#### **R18-9-E303. 4.03 General Permit: Composting Toilet, Less Than 3000 Gallons Per Day Design Flow**

A. A 4.03 General Permit allows a composting toilet.

1. ~~Definition. For purposes of this Section, Definitions.~~

a. ~~a "composting Composting toilet" means a treatment technology that receives human waste from a waterless toilet directly into an aerobic composting tank where dehydration and biological activity reduce the waste volume and the content of nutrients and harmful microorganisms to an appropriate level for later disposal at the site or elsewhere by other means.~~

b. ~~"Non-toilet wastewater" means all wastewater generated on-site except for wastewater associated with toilets. Non-toilet wastewater includes wastewater originating from a clothes washer, bathtub, shower, dishwasher, and sinks including kitchen sinks.~~

~~2. An applicant shall use a composting toilet system only if a wastewater system or gray water system is used to accommodate wastewater that does not originate from toilets.~~

~~3.2. An applicant may use a composting toilet if:~~

- a. Limited water availability prevents use of other types of on-site wastewater treatment facilities,
- b. Environmental constraints prevent the discharge of wastewater or nutrients to a sensitive area,
- c. Inadequate space prevents use of other systems, ~~or~~
- d. Severe site limitations exist that make other forms of treatment or disposal unacceptable, ~~or~~
- e. Maximum water conservation is desired.

~~3. A permittee may use a composting toilet only if:~~

- a. Non-toilet wastewater is managed as provided in this Section, and
- b. Any gray water, as defined in R18-9-701(4), is beneficially reused according to the requirements in 18 A.A.C. 7.

B. Restrictions. ~~An applicant shall:~~

~~1. Not install a composting toilet if the composting chamber temperature cannot be maintained between 60°F. and 70°F. or for any seven day average the temperature of the chamber is less than 55°F. or greater than 80°F., and The maximum daily use of the composting toilet is 50 persons.~~

~~2. Ensure that a A composting toilet system receives shall only receive human excrement unless the manufacturer's documentation specifically allows kitchen or other wastes to be deposited into the toilet.~~

C. Performance. An applicant shall ensure that ~~a composting toilet:~~

~~1. Prevents The composting toilet provides containment to prevent the discharge of blackwater toilet contents to the native soil through containment in the composting toilet system,~~

~~2. Manages gray water as provided in this Article or under A.A.C. Title 18, and~~

~~3.2. Prevents The composting toilet limits access by vectors to the contained waste, and~~

~~3. Non-toilet wastewater is disposed into the subsurface to prevent any wastewater from ponding on the surface.~~

- D. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), the applicant shall submit the following information:
1. Composting toilet.
    - ~~1-~~ a. The name and address of the composting toilet system manufacturer;
    - ~~2-~~ b. A copy of the manufacturer's warranty, installation, and operation and maintenance ~~plans~~ specifications;
    - ~~3-~~ c. The product model number;
    - ~~4-~~ d. The rate of composting, ~~and~~ capacity, and waste accumulation volume calculations;
    - ~~5-~~ e. Documentation of listing by a national listing organization indicating that the composting toilet meets the stated manufacturer's specifications for loading, treatment performance, and operation;
    - ~~6-~~ f. The method of vector control; and
    - ~~7-~~ g. ~~The calculation of waste volume and~~ planned method for disposing of the composted human excrement residue.
  2. Non-toilet wastewater.
    - a. The number of bedrooms in the dwelling and the corresponding design flow of the disposal works for the non-toilet wastewater;
    - b. Unless a default SAR of 0.25 gallons per day per square foot is used, the results from soil evaluation or percolation testing that adequately characterize the soils into which the non-toilet wastewater will be dispersed and locations on the site plan of soil evaluation and percolation testing; and
    - c. The design for the disposal works for the non-toilet wastewater following subsection (F), including location of the interceptor, location and configuration of the trench or bed used for wastewater dispersal, and location of connecting wastewater pipelines.
- E. Design requirements for a composting toilet. An applicant shall ensure that:
1. Ensure that the The composting tank is ~~double-walled for leak protection~~ watertight, constructed of solid durable materials not subject to excessive corrosion or decay, and is constructed to exclude access by vectors;
  2. ~~Ensure that the~~ The composting tank has airtight seals to prevent odor or toxic gas from escaping into the building. The system may be vented to the outside;
  3. ~~Base the~~ The capacity of the tank and rate of composting ~~and capacity calculations~~ is calculated based on the lowest monthly average tank temperature, unless a temperature control device is installed;
  4. ~~Unless a temperature control device is installed, ensure that the capacity of the composting facility provides adequate storage for all waste produced during the months when the average temperature is below 55°F., if the manufacturer allows operation at this temperature. The composting system provides adequate storage of all waste produced during the months when the average temperature is below 55°F, unless a temperature control device is installed to increase the composting rate and reduce waste volume; and~~
  5. ~~Dispose of the composted product at the end of the treatment process as provided under 18 A.A.C. 8 and 18 A.A.C. 13.~~
- F. ~~Design requirements for the disposal works for the non-toilet wastewater.~~
1. Interceptor. An applicant shall ensure that the design complies with the following:
    - a. The wastewater passes into an interceptor before it is conducted to the subsurface for dispersal;
    - b. The interceptor is designed to remove grease, oil, fibers, and solids to ensure long-term performance of the trench or bed used for subsurface dispersal;
    - c. The interceptor is covered to restrict access and eliminate habitat for mosquitoes and other vectors; and
    - d. The minimum interceptor size is based on design flow and whether the trench or bed receives all non-toilet wastewater generated at the site, or the flow of non-toilet wastewater is reduced because gray water is separately collected and beneficially reused according to the requirements in 18 A.A.C. 7.
      - i. For a dwelling, the following apply:

<b>No. of Bedrooms</b>	<b>Design Flow (gallons per day)</b>		<b>Minimum Interceptor Size (gallons)</b>	
	<b>Gray Water Is Not Separated and Reused</b>	<b>All Gray Water Sources Are Collected and Reused</b>	<b>Gray Water Is Not Separated and Reused</b>	<b>All Gray Water Sources Are Collected and Reused</b>
1-3	60	270	125	600
4	72	330	150	700
5	84	380	175	800
6	96	420	200	900
7	108	460	225	1000

- ii. For other than a dwelling, the minimum interceptor size in gallons is 2.1 times the design flow for kitchen wastewater only or kitchen wastewater and gray water, as applicable.
- 2. Dispersal of non-toilet wastewater. An applicant shall ensure that the design complies with the following:
  - a. A trench or bed is used to disperse the wastewater into the subsurface.
  - b. Sizing of the trench or bed is based on the design flow and the SAR derived from soil evaluation or percolation tests or a default SAR of 0.25 gallons per day per square foot. Sizing depends on whether the trench or bed receives all non-toilet wastewater generated at the site or the flow of non-toilet wastewater is reduced because gray water is separately collected and beneficially reused according to the requirements in 18 A.A.C. 7.
    - i. For a dwelling, the following apply if a default SAR of 0.25 gallons per day per square foot is used:

<b>Number of Bedrooms</b>	<b>Minimum Trench or Bed Absorption Area if Default SAR of 0.25 is Used* (Square feet)</b>	
	<b>Gray Water Is Not Separated and Reused</b>	<b>All Gray Water Sources Are Collected and Reused</b>
1-3	240	1080
4	288	1320
5	336	1520
6	384	1680
7	432	1840

\* The default SAR may be used only if soils in the trench or bed are reasonably free of clay, caliche, rock or similar material so as to not reduce absorption below the default SAR.

- ii. For other than a dwelling, the minimum trench or bed absorption area is determined by multiplying the design flow by the SAR.
- c. The minimum vertical separation from the bottom of the trench or bed to the top of the seasonal high water table is at least 5 feet.
- d. Other aspects of trench or bed design follow R18-9-E302, as applicable.
- 3. Setback distances. Setback distances are no less than one-fifth of the setback distances specified in R18-9-A312(C), but not less than 5 feet.

F.G. Operation and maintenance requirements. A permittee shall:

- 1. Composting toilet.
  - 1- a. Provide adequate mixing, ventilation, temperature control, moisture, and bulk to reduce fire hazard and prevent anaerobic conditions;
  - 2- b. If consistent with this Chapter, follow the ~~Follow~~ manufacturer's ~~recommendations~~ documentation ~~regarding use of an~~ for addition of any organic bulking agent to control liquid drainage, promote aeration, or provide additional carbon;



- 3- c. ~~If consistent with this Chapter, follow the~~ Follow manufacturer's ~~recommendations~~ documentation for operation, ~~and maintenance, and recordkeeping~~ regarding rotating ~~times~~ times used to control the movement of material to the bottom of the composting chamber;
  - 4- d. If batch system containers are mounted on a carousel, place a new container in the toilet area if the previous one is full;
  - 5- e. Ensure that only human waste, paper approved for septic tank use, and the amount of bulking material required for proper maintenance is introduced to the composting tank. The ~~applicant~~ permittee shall ~~immediately~~ remove all other materials or trash. If allowed by the manufacturer's ~~specifications~~ documentation and consistent with this Chapter, other nonliquid compostable residues, such as kitchen fruit and vegetable ~~peels~~ waste, may be added to the toilet;
  - 6- f. Ensure that any liquid end product ~~that does not evaporate~~ is sprayed back onto the composting waste material or removed by a ~~permitted or licensed~~ waste hauler licensed under 18 A.A.C. 13, Article 11;
  - 7- g. Remove and dispose of composted waste, ~~at least annually as necessary,~~ using a ~~permitted or licensed~~ waste hauler licensed under 18 A.A.C. 13, Article 11 if the waste is not placed in a disposal area for burial or used on-site as mulch;
  - 8- h. Before ending use for an extended period take measures to assure that moisture is maintained to sustain bacterial activity and free liquids in the tank do not freeze; and
  - 9- i. After an extended period of non-use, empty the composting tank of solid end product and inspect all mechanical components to verify that the mechanical components are operating as designed.
2. Non-toilet wastewater.
- a. Ensure that the interceptor is maintained regularly according to manufacturer's instruction to prevent grease and solid wastes from impairing performance of the trench or bed used for dispersal of the non-toilet wastewater.
  - b. Protect the area of the trench or bed from soil compaction or other activity that would impair dispersal performance.

**R18-9-E304. 4.04 General Permit: Pressure Distribution System, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.04 General Permit allows pressurized distribution of wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
  1. Definition. ~~For purposes of this Section, a~~ "pressure ~~Pressure~~-distribution system" means a tank, pump, controls, and piping that conducts wastewater under pressure in controlled amounts and intervals to a ~~disposal field, bed, trench, bed or trench~~ or other means of ~~disposal~~ distribution authorized by a general permit for an on-site wastewater treatment facility.
  2. An applicant may use a pressure distribution ~~systems~~ system if a gravity flow system is unsuitable, inadequate, unfeasible, or cost prohibitive because of site limitations or other conditions, or if needed to optimally ~~disperse~~ distribute wastewater to ~~some types of disposal systems~~.
- B. Performance. An applicant shall ensure that a pressure distribution system:
  1. Has ~~Department approved~~ dispersing components that provide proper dispersal of wastewater so that loading rates are optimized for the ~~particular system~~ intended purpose, and
  2. Prevents ponding on the land surface.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), the applicant shall submit:
  1. A copy of operation, maintenance, and warranty materials for the principal components; and
  2. A copy of dosing specifications, including pump curves, dispersing component curves, and float switch settings.
- D. Design requirements.
  1. An applicant shall ensure that pumps:
    - a. Are rated for ~~effluent~~ wastewater service by the manufacturer and certified by Underwriters Laboratories,
    - b. Achieve the minimum design flow rate and total dynamic head requirements for the particular site, and
    - c. Incorporate a quick disconnect using compression-type unions for pressure connections. The

- applicant shall ensure that:
- i. Quick-disconnects are accessible in the pressure piping, and
  - ii. A pump has adequate lift attachments for removal and replacement of the pump and switch assembly without entering the dosing tank or process chamber.
2. Switches, controls, alarms, and electrical components. An applicant shall ensure that:
- a. Switches and controls accommodate the minimum and maximum dose capacities of the distribution network design. Pressure diaphragm level control switches are prohibited;
  - b. Controls ~~designed for fail safe that can be tested in the field are used to maintain proper treatment or~~ and flow equalization functions are field tested to assure compliance with the design and operation specifications. The applicant shall include counters or flow meters if critical to control functions, such as timed dosing;
  - c. Control panels and alarms:
    - i. Are mounted in an exterior location visible from the dwelling,
    - ii. Provide manual pump switch and alarm test features, and
    - iii. Include written instructions covering standard operation and alarm events-;
  - d. Audible and visual alarms are used for all critical control functions, such as pump failures, treatment failures, and excess flows. The applicant shall ensure that:
    - i. The visual portion of the signal is conspicuous from a distance 50 feet from the system and its appurtenances,
    - ii. The audible portion of the signal is between 70 and 75 db at 5 feet and is discernable from a distance of 50 feet from the system and its appurtenances, and
    - iii. Alarms, test features, and controls are on a non-dedicated electrical circuit associated with a frequently used household lighting fixture and separate from the dedicated circuit for the pump-;
  - e. All electrical wiring complies with the National Electrical Code, ~~1999~~ 2002 Edition, published by the National Fire Protection Association. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101. The applicant shall ensure:
    - i. Connections are made using National Electrical Manufacturers Association (NEMA) 4x junction boxes certified by Underwriters Laboratories; and
    - ii. All controls are in NEMA 3r, 4, or 4x enclosures for outdoor use.
3. Dosing tanks and wastewater distribution components. ~~An applicant shall:~~
- a. An applicant shall:
    - ~~i.~~ i. Design dosing tanks to withstand anticipated internal and external loads under full and empty conditions, and design concrete tanks to meet the “Standard Specification for Precast Concrete Water and Wastewater Structures,” published by the American Society for Testing and Materials, (C-913-98), approved December 10, 1998. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959;
    - ~~ii.~~ ii. Design dosing tanks to be easily accessible and have secured covers;
    - ~~iii.~~ iii. Install risers to provide access to the inlet and outlet of the tank and to service internal components;
    - ~~iv.~~ iv. Ensure that the volume of the dosing tank accommodates bottom depth below maximum drawdown, maximum design dose, including any drainback, volume to high water alarm, and a reserve volume above the high water alarm level that is not less than the daily design flow volume. If the tank is time dosed, the applicant shall ensure that the combined surge capacity and reserve volume above the high water alarm is not less than the daily design flow volume; ~~and~~

- e. v. Ensure that dosing tanks are watertight and anti-buoyant; and
- vi. Ensure that orifice shields are used to achieve the design discharge rate of the orifices;
- b. An applicant may use a septic tank second compartment or a second septic tank in series as a dosing tank if all dosing tank requirements of this Section are met and a screened vault is used instead of the septic tank effluent filter.

~~E. Installation requirements. An applicant may use a septic tank second compartment or a second septic tank in series as a dosing tank if all dosing tank requirements of this Section are met and a screened vault is used instead of the septic tank effluent filter. An applicant shall:~~

- ~~1. Install switches, controls, alarms, and electrical components for easy access for routine monitoring and maintenance; and~~
- ~~2. Compact berms around the disposal area to 85% and ensure that the berms are adequate to retain wastewater and rainwater from a 10-year, 24-hour rainfall event within the disposal field.~~

~~F.E. Additional Verification of General Permit Conformance Discharge Authorization requirements. An installer shall provide copies of instructions for the critical controls of the system to the homeowner and applicant. The applicant shall submit one copy with information required by the Department before for issuance of the Verification of General Permit Conformance Discharge Authorization.~~

~~G.F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, a permittee shall ensure that:~~

- ~~1. The operation and maintenance plan for the on-site wastewater treatment facility that supplies the wastewater to the pressure distribution system specifies inspection and maintenance needed for the following items:
 
  - a. Sludge level in the bottom of the treatment and dosing tanks,
  - b. Watertightness,
  - c. Condition of electrical and mechanical components, and
  - d. Piping and other components functioning within design limits;.~~
- ~~2. All critical control functions are specified in the Operation and Maintenance Plan operation and maintenance manual for testing to demonstrate compliance with design specifications, including:
 
  - a. Alarms, test features, and controls;
  - b. Float switch level settings;
  - c. Dose rate, volume, and frequency, if applicable;
  - d. Distal pressure or squirt height, if applicable; and
  - e. Voltage test on pumps, motors, and controls, as applicable;.~~
- ~~3. The finished grade is observed and maintained for proper surface drainage. The applicant shall observe the levelness of the tank for differential settling. If there is settling, the applicant shall grade the facility to maintain surface drainage.~~

**R18-9-E305. 4.05 General Permit: Gravelless Trench, Less Than 3000 Gallons Per Day Design Flow**

A. A 4.05 General Permit allows a gravelless trench receiving wastewater treated to a quality equal to or better than that provided by a 4.02 General Permit septic tank. This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-A314 to the gravelless pipe system described in this Section.

- 1. Definition. ~~For purposes of this Section, a “gravelless Gravelless trench” means a disposal technology characterized by installation of a proprietary pipe, chamber, and geocomposite or other substitute media into native soil instead of the distribution pipe and aggregate fill used in a conventional disposal field trench allowed by R18-9-E302.~~
- 2. A permittee may use a gravelless trench if suitable gravel or volcanic rock aggregate is unavailable, excessively expensive, or if adverse site conditions make movement of gravel difficult, damaging, or time consuming.

B. Performance. An applicant shall design a gravelless trench on the basis that treated wastewater released to the native soil meets the following criteria:

- 1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
- 2. BOD<sub>5</sub> of 150 milligrams per liter, 30-day arithmetic mean;
- 3. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
- 4. Total coliform level of 100,000,000 (Log<sub>10</sub> 8) colony forming units per 100 milliliters, 95th percentile.

C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-

- 9-A301(B) and R18-9-A309(B), an applicant shall submit the following:
1. The soil absorption area that ~~is~~ would be required if a conventional disposal ~~field~~ trench filled with aggregate ~~is~~ was used at the site,
  2. The configuration and size of the proposed gravelless disposal field, and
  3. The manufacturer's installation instructions and warranty of performance for absorbing wastewater into the native soil.
- D. Design requirements. An applicant shall:
1. Ensure that the top of the gravelless disposal pipe or similar disposal mechanism is at least ~~six~~ 6 inches below the surface of the native soil and 12 to 36 inches below finished grade if approved fill is placed on top of the installation;
  2. Calculate the infiltration surface as follows:
    - a. For ~~eight~~ 8 inch diameter pipe, ~~two~~ 2 square feet of absorption area is allowed per linear foot;
    - b. For 10 inch diameter pipe, ~~three~~ 3 square feet of absorption area is allowed per linear foot;
    - c. For bundles of two pipes of the same diameter, the absorption area is calculated as 1.67 times the absorption area of one pipe; and
    - d. For bundles of three pipes of the same diameter, the absorption area is calculated as 2.00 times the absorption area of one pipe;
  3. Use a pressure distribution system meeting the requirements of R18-9-E304 in medium sand, coarse sand, and coarser soils; and
  4. Construct the drainfield of material that will not decay, deteriorate, or leach chemicals or byproducts if exposed to sewage or the subsurface soil environment.
- E. Installation requirements. An applicant shall:
1. Install the gravelless pipe material according to manufacturer's instructions if the instructions are consistent with this Chapter,
  2. Ensure that the installed disposal system can withstand the physical disturbance of backfilling and the load of any soil cover above natural grade placed over the installation, and
  3. Shape any backfill and soil cover in the area of installation to prevent settlement and ponding of rainfall for the life of the disposal field.
- F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313, the permittee shall inspect the finished grade in the vicinity of the gravelless disposal field for maintenance of proper drainage and protection from damaging loads.

**R18-9-E306. 4.06 General Permit: Natural Seal Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.06 General Permit allows a natural seal evapotranspiration bed receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302. ~~This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-E314 to the general permitted disposal feature described in this Section.~~
1. Definition. ~~For purposes of this Section,~~ a "natural Natural seal evapotranspiration bed" means a disposal technology characterized by a bed of sand or other durable media with an internal wastewater distribution system, contained on the bottom and sidewalls by an engineered liner consisting of natural soil and clay materials.
  2. An applicant may use a natural seal evapotranspiration bed if site conditions restrict soil infiltration or require reduction of the volume ~~or nitrogen content~~ of wastewater discharged to the native soil underlying the natural seal liner.
  3. Provision of a reserve area is not required for a lined evapotranspiration bed.
- B. Restrictions. Unless a person provides design documentation to show that a natural seal evapotranspiration bed will properly function, the person shall not install this technology if:
1. Average minimum temperature in any month is 20°F or less,
  2. Over 1/3 of the average annual precipitation falls in a 30-day period, or
  3. Design flow exceeds net evaporation.
- C. Performance. An applicant shall ensure that a natural seal evapotranspiration bed:
1. Minimizes discharge to the native soil through the natural seal liner,
  2. Maximizes wastewater disposed to the atmosphere by evapotranspiration, and
  3. Prevents ponding of wastewater on the bed surface and maintains an interval of unsaturated media directly beneath the bed surface.

- ~~D. Reference design.~~
- ~~1. An applicant may design and install a natural seal evapotranspiration bed with the performance required in subsection (C), following a reference design on file with the Department.~~
  - ~~2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's Notice of Intent to Discharge.~~
- ~~E. Alternative design. An applicant may submit an alternative to the reference design for a natural seal evapotranspiration bed that achieves the performance requirements specified in subsection (C) by following requirements specified in R18-9-A312(G).~~
- ~~1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
  - ~~2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's Notice of Intent to Discharge.~~
- ~~D. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:~~
- ~~1. Capillary rise potential test results for the media used to fill the evapotranspiration bed, unless sand meeting a  $D_{10}$  of 0.1 millimeter (50 percent by weight of grains equal to or smaller than 0.1 millimeter in size) is used; and~~
  - ~~2. Water mass balance calculations used to size the evapotranspiration bed.~~
- ~~E. Design requirements. An applicant shall:~~
- ~~1. Ensure that the evapotranspiration bed is from 18 to 36 inches deep and shall calculate the bed design on the basis of the capillary rise of the bed media, according to the "Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured by Porous-Plate Apparatus," (D 2325-68), reapproved 2000, and incorporated by reference in R18-9-E307(E), and the anticipated maximum frost depth;~~
  - ~~2. Base design area calculations on a water mass balance for the winter months and the design seepage rate;~~
  - ~~3. Ensure that the natural seal liner is a durable, low hydraulic conductivity liner that has a specified design and seepage rate for the calculated bottom and sidewall area;~~
  - ~~4. If a surfacing layer is used, use topsoil, dark cinders, decomposed granite, or similar landscaping material placed to a maximum depth of 2 inches and ensure that:
 
    - ~~a. If topsoil is used as a surfacing layer for growth of landscape plants:
 
      - ~~i. The topsoil is a fertile, friable soil obtained from well-drained arable land;~~
      - ~~ii. The topsoil is free of nut grass, refuse, roots, heavy clay, clods, noxious weeds, or any other material toxic to plant growth;~~
      - ~~iii. The pH of the topsoil is between 5.5 and 8.0;~~
      - ~~iv. The plasticity index of the topsoil is between 3 and 15; and~~
      - ~~v. The topsoil contains approximately 1-1/2 percent organic matter, by dry weight, either natural or added;~~~~
    - ~~b. If another landscaping material is used as a surfacing layer, the material meets the following gradation:~~~~
- | <u>Sieve Size</u> | <u>Percent Passing</u> |
|-------------------|------------------------|
| <u>1"</u>         | <u>100</u>             |
| <u>1/2"</u>       | <u>95-100</u>          |
| <u>No. 4</u>      | <u>90-100</u>          |
| <u>No. 10</u>     | <u>70-100</u>          |
| <u>No. 200</u>    | <u>15-70</u>           |
- ~~5. Use shallow-rooted, non-invasive, salt and drought tolerant evergreens if vegetation is planted on the evapotranspiration be~~
  - ~~6. Install at least one observation port to allow determination of the depth to the liquid surface of wastewater within the evapotranspiration bed;~~
  - ~~7. Design the bed to pump out the saturated zone if accumulated salts or a similar condition impairs bed performance; and~~
  - ~~8. Instead of the minimum vertical separation required under R18-9-A312(E), ensure that the minimum vertical separation from the bottom of the natural seal evapotranspiration bed liner to the seasonal~~

high water table is at least 12 inches.

F. Installation requirements. An applicant shall ensure that:

1. The liner covers the bottom and all sidewalls of the bed and is properly installed on a stable base in accordance with installation specifications.
2. If the inlet pipe passes through the liner, the joint is tightly sealed to minimize leakage during the operational life of the facility.
3. The liner is leak tested under the supervision of an Arizona-registered professional engineer to confirm the specified design leakage rate, and
4. A 2 to 4 inch layer of 1/2 to 1 inch gravel or crushed stone is placed around the distribution pipes within the bed. The applicant shall place filter cloth on top of the gravel or crushed stone to prevent sand from settling into the crushed stone or gravel.

G. Additional Discharge Authorization requirements. An applicant shall submit the results of the leakage test, submitted under subsection (F)(3), to the Department before issuance of the Discharge Authorization.

H. Operation and maintenance requirements. The permittee shall:

1. Not allow irrigation of an evapotranspiration bed, and
2. Protect the bed from vehicle loads and other damaging activities.

#### **R18-9-E307. 4.07 General Permit: Lined Evapotranspiration Bed, Less Than 3000 Gallons Per Day Design Flow**

A. A 4.07 General Permit allows a lined evapotranspiration bed receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank ~~permitted under R18-9-E302. This general permit authorizes the discharge of wastewater from a septic tank that meets the requirements of R18-9-E314 to the general permitted disposal feature described in this Section.~~

1. Definition. ~~For purposes of this Section, a “lined~~ Lined evapotranspiration bed” means a disposal technology characterized by a bed of sand or other durable media with an internal wastewater distribution system contained on the bottom and sidewalls by an impervious synthetic liner.
2. An applicant may use a lined evapotranspiration bed if site conditions restrict soil infiltration or require reduction or elimination of the volume of wastewater or nitrogen load content of wastewater discharged to the native soil.

B. Restrictions. Unless a person provides design documentation to show that a lined evapotranspiration bed will properly function, the person shall not install this technology if:

1. Average minimum temperature in any month is 20°F or less,
2. Over 1/3 of average annual precipitation falls in a 30-day period, or
3. Design flow exceeds net evaporation.

C. Performance. An applicant shall ensure that a lined evapotranspiration bed:

1. Prevents discharge to the native soil by a synthetic liner,
2. Attains full disposal of wastewater to the atmosphere by evapotranspiration, and
3. Prevents ponding of wastewater on the bed surface and maintains an interval of unsaturated media directly beneath the bed surface.

D. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:

1. Capillary rise potential test results for the media used to fill the evapotranspiration bed, unless sand meeting a D<sub>50</sub> of 0.1 millimeter (50% percent by weight of grains equal to or smaller than 0.1 millimeter in size) is used; and
2. Water mass balance calculations used to size the evapotranspiration bed.

E. Design requirements. An applicant shall:

1. Ensure that the evapotranspiration bed is from 18 to 36 inches deep and shall calculate the bed design on the basis of the capillary rise of the bed media, according to the “Standard Test Method for Capillary-Moisture Relationships for Coarse- and Medium-Textured by Porous-Plate Apparatus,” published by the American Society for Testing and Materials, (D-2325-68), reapproved ~~1994~~<sup>Ed 1</sup> 2000, and the anticipated maximum frost depth. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959;

2. Base design area calculations on a water mass balance for the winter months;
3. Ensure that the evapotranspiration bed liner is a  durable  low hydraulic conductivity synthetic liner that has a calculated  bottom area and sidewall  seepage rate of less than 550 gallons per acre per day;
4. If a surfacing layer is used, use topsoil, dark cinders, decomposed granite, or similar landscaping material placed to a maximum depth of  ~~two~~   2  inches.  ~~The applicant and~~  shall ensure that:
  - a.  If topsoil is used as a surfacing layer for growth of landscape plants: 
    - ~~a.~~   i.  The topsoil is a fertile, friable soil obtained from well-drained arable land;  ~~and~~
    - ii.   The topsoil  is free of nut grass, refuse, roots, heavy clay, clods, noxious weeds, or any other material toxic to plant growth;  ~~and~~
    - ~~b.~~   iii.  The pH factor  ~~does not exceed 8.0 or fall lower than 5.5, soluble salts do not exceed 1500 milligrams per liter, of the topsoil is between 5.5 and 8.0;~~
    - iv.   ~~the~~   The  plasticity index  of the topsoil is in the range of   ~~between three~~   3 and 15  inclusive; and
    - v.   ~~the soil~~   The topsoil  contains approximately 1-1/2%  percent  organic matter, by dry weight, either natural or added;
  - ~~b.~~   The applicant shall ensure that   If another landscaping material is used for the  as a surfacing layer,  the material  meets the following gradation:

Sieve Size	Percent Passing
1"	100
1/2"	95-100
No. 4	90-100
No. 10	70-100
No. 200	15-70

5. Use shallow-rooted, non-invasive, salt and drought tolerant evergreens if vegetation is planted on the evapotranspiration bed;
  6. Install at least one observation port to allow determination of the depth to the liquid surface of wastewater within the evapotranspiration bed;
  7. Design the bed to pump out the saturated zone if accumulated salts or a similar condition impairs bed performance. Provision of a reserve area is not required for a lined evapotranspiration bed; and
  8. Instead of the minimum vertical separation required under R18-9-A312(E), ensure that the minimum vertical separation from the bottom of the evapotranspiration bed liner to the surface of the  seasonal high  water table or impervious layer or formation is at least 12 inches.
- F. Installation requirements. An applicant shall ensure that:
1. All liner seams are factory fabricated or field welded according to manufacturer's specifications  ~~not inconsistent with this Chapter. The applicant shall ensure that:~~
  2.   ~~a.~~  The liner covers the bottom and all sidewalls of the bed and is cushioned on the top and bottom with layers of sand at least  ~~two~~   2  inches thick or other equivalently protective material,  ~~and~~
  3.   ~~b.~~  If the inlet pipe passes through the liner, the joint is tightly sealed  to minimize leakage during the operational life of the facility.
  - 2.4.  The liner is leak tested under the supervision of an Arizona-registered professional engineer,  ~~and~~
  - 3.5.  A  ~~two-~~   2  to  ~~four~~   4  inch layer of 1/2 to  ~~one~~   1  inch gravel or crushed stone is placed around the distribution pipes within the bed. The applicant shall place filter cloth on top of the gravel or crushed stone to prevent sand from settling into the crushed stone or gravel.
- G.  ~~Additional Verification of General Permit Conformance~~   Discharge Authorization  requirements. An applicant shall submit the sealed results of the liner test to the Department before issuance of the  ~~Verification of General Permit Conformance~~   Discharge Authorization .
- H. Operation and maintenance requirements.  The permittee shall
- ~~1. Irrigation~~  not allow irrigation of an evapotranspiration bed  ~~is not allowed. and~~
  - ~~2. A permittee shall~~  protect the bed from vehicle loads and other damaging activities.

**R18-9-E308. 4.08 General Permit: Wisconsin Mound, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.08 General Permit allows a Wisconsin mound receiving wastewater treated to a level equal to or better than that provided by a  ~~4.02 General Permit~~  septic tank  permitted under R18-9-E302.

1. Definition. ~~For purposes of this Section, a~~ “Wisconsin mound” means a disposal technology characterized by:
    - a. An above-grade bed system that blends with the land surface into which is dispensed pressure dosed wastewater from a septic tank or other upstream treatment device,
    - b. Dispersal of wastewater under unsaturated flow conditions through the engineered media system contained in the mound, and
    - c. Wastewater treated by passage through the mound before percolation into the native soil below the mound.
  2. An applicant may use a Wisconsin mound if the native soil has excessively high or low permeability, there is little native soil overlying fractured or excessively permeable rock, or a reduction in minimum vertical separation is desired.
- B. Performance. An applicant shall design a Wisconsin mound on the basis that treated wastewater released to the native soil meets the following criteria:
1. Performance Category A.
    - ~~1-~~ a. TSS of 30 milligrams per liter, 30-day arithmetic mean;
    - ~~2-~~ b. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
    - ~~3-~~ c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
    - 4- d. Total coliform level of 300,000 (Log<sub>10</sub> 5.5) colony forming units per 100 milliliters, 95th percentile-;
  2. Performance Category B.
    - ~~a.~~ TSS of 20 milligrams per liter, 30-day arithmetic mean;
    - ~~b.~~ BOD<sub>5</sub> of 20 milligrams per liter, 30-day arithmetic mean;
    - ~~c.~~ Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
    - ~~d.~~ Total coliform level of 1000 (Log<sub>10</sub> 3.0) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. Specifications for the internal wastewater distribution system media proposed for use in the Wisconsin mound;
  2. Two scaled or dimensioned cross sections of the mound (~~4~~ one of the shortest basal area footprint dimension and one of the lengthwise dimension); and
  3. Design calculations following the “Wisconsin Mound Soil Absorption System: Siting, Design, and Construction Manual,” published by the University of Wisconsin - Madison, January 1990 Edition. This material is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State,~~ or may be obtained from the University of Wisconsin - Madison, SSWMP, 1525 Observatory Drive, Room 345, Madison, WI 53706.
- D. Design requirements. An applicant shall ensure that:
1. Pressure dosed wastewater is delivered into the Wisconsin mound through a pressurized line and secondary distribution lines into an engineered aggregate infiltration bed, or equivalent system, in conformance with R18-9-E304 and the Wisconsin Mound Manual. The applicant shall ensure that the aggregate is washed;
  2. Wastewater is distributed in the aggregate infiltration bed and applied to the mound bed inlet surface at the following loading rates:
    - a. Not more than 1.0 gallon per day per square foot of mound bed inlet surface if the mound bed media conforms with the “Standard Specification for Concrete Aggregates,” (C-33-99a<sup>E1</sup>), published by the American Society for Testing and Materials, approved July 10, 1999, and the Wisconsin Mound Manual, except if cinder sand is used that is the appropriate grade with not more than ~~3%~~ percent passing a #200 screen. The Standard Specification for Concrete Aggregates,” (C-33-99a<sup>E1</sup>), approved July 10, 1999, is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State,~~ or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959. The applicant shall:



- i. For cinder sand, ensure that the rate is not more than 0.8 gallons per day per square foot of mound bed inlet surface; and
      - ii. Wash the media used for the mound bed.;
    - b. A rate, configuration, or material for the infiltration bed or the mound bed submitted under R18-9-A312(G). The applicant shall ensure that the submittal includes supporting analyses for the design configuration, materials, and loading rates.;
  3. The aggregate infiltration bed and mound bed is capped by coarser textured soil, such as sand, sandy loam, or silt loam. Silty clay, clay loam, or clays are prohibited;
  4. The cap material is covered by topsoil following the Wisconsin Mound Manual, and the topsoil is capable of supporting vegetation, is not clay, and is graded to drain;
  5. The top and bottom surfaces of the aggregate infiltration bed are level and do not exceed 10 feet in width. ~~The applicant shall ensure~~ and that:
    - a. The minimum depth of the aggregate infiltration bed is ~~nine~~ 9 inches, and
    - b. Synthetic filter fabric permeable to water and air and capable of supporting the cap and topsoil load is placed on the top surface of the aggregate infiltration bed.;
  6. The minimum depth of mound bed media is :
    - a. Performance Category A, 12 inches;
    - b. Performance Category B, 24 inches;
  7. The maximum allowable side slope of the mound bed, cap material, and topsoil is not more than one vertical to three horizontal;
  8. Ports for inspection and monitoring are provided to verify performance, including verification of unsaturated flow within the aggregate infiltration bed. The applicant shall:
    - a. Install a vertical PVC pipe and cap with a minimum diameter of ~~four~~ 4 inches as an inspection port at the end of the disposal line, and
    - b. Install the pipe with a physical restraint to maintain pipe position.;
  9. The main pressurized line and secondary distribution lines for the aggregate infiltration bed are equipped at appropriate locations with cleanouts to grade;
  10. Setbacks specified in R18-9-A312(C) are observed, except that the applicant shall:
    - a. Increase setbacks for the following downslope features at least 30 feet from the toe of the mound system:
      - i. Property line,
      - ii. Driveway,
      - iii. Building,
      - iv. Ditch or interceptor drain, or
      - v. Any other feature that impedes water movement away from the mound;
    - b. Ensure that no upslope natural feature or improvement channels surface water or groundwater to the mound area.;
  11. The active portion of the basal area of native soil below the mound conforms to the Wisconsin Mound Manual. The applicant shall:
    - a. Calculate the absorption of wastewater into the native soil for only the effective basal area;
    - b. Apply the soil ~~application rates~~ absorption rate specified in R18-9-A312(D). The applicant may increase allowable loading rate to the mound bed inlet surface ~~may be increased~~ up to 1.6 times if the wastewater dispersed to the mound is pretreated to reduce the sum of TSS and BOD<sub>5</sub> to 60 mg/l or less. The applicant may increase the soil application absorption rate ~~may be increased~~ to not more than 0.20 gallons per day per square foot of ~~effective~~ basal area if the following slowly permeable soils underlie the mound:
      - i. Sandy clay loam, clay loam, silty clay loam or finer with weak platy structure; or
      - ii. Sandy clay loam, clay loam, silty clay loam or silt loam with massive structure.;
  12. The slope of the native soil at the basal area does not exceed 25% percent, and a slope stability analysis is performed whenever the basal area or site slope within 50 horizontal feet from the mound system footprint exceeds 15% percent.
- E. Installation. An applicant shall:
1. Prepare native soil for construction of a Wisconsin mound system. The applicant shall:
    - a. Mow vegetation and cut down trees in the vicinity of the basal area site to within ~~two~~ 2 inches of the surface;
    - b. Leave in place boulders and tree stumps and other herbaceous material that excessively alters

- the soil structure if removed after mowing and cutting;
    - c. Plow native soil serving as the basal area footprint along the contours to ~~seven 7~~ to ~~eight 8~~ inches inch depth;
    - d. Not substitute rototilling for plowing; and
    - e. Begin mound construction immediately after plowing;
  - 2. Place each layer of the bed system to prevent differential settling and promote uniform density; and
  - 3. Use the Wisconsin Mound Manual to guide any other detail of installation. ~~Installation~~ The applicant may vary installation procedures and criteria ~~may vary~~ depending on mound design but shall ~~be use~~ installation procedures and criteria that are at least equivalent to the Wisconsin Mound Manual.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, the permittee shall:
  - 1. If an existing mound system shows evidence of overload or hydraulic failure, consider the following measures:
    - a. Verification of actual loading and performance of the pretreatment system and verification of the watertightness of the pretreatment and dosing tanks;
    - b. Determination of dosing rates and dosing intervals to the aggregate infiltration bed and comparison with the original design to evaluate the presence or absence of saturated conditions in the aggregate infiltration bed;
    - c. If the above steps do not indicate an anomalous condition, evaluation of the site and recalculation of the disposal capability to determine if lengthening of the mound is feasible;
    - d. Site modifications including, changing surface drainage patterns at upgrade locations and lowering the groundwater level by installing interceptor drains to reduce native soil saturation at shallow levels; and
    - e. Increasing the basal area, consistent with R18-9-A309(A)(9)(a)(iv), which is most efficient if the bed length is increased;
  - ~~2. If the mound needs to be expanded in size, submit a new Notice of Intent to Discharge for this modification; and~~
  - ~~3.2.~~ Specify servicing and waste disposal procedures and task schedules necessary for clearing the main pressurized wastewater line and secondary distribution lines, septic tank effluent filter, pump intake, and controls.

**R18-9-E309. 4.09 General Permit: Engineered Pad System, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.09 General Permit allows an engineered pad system receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
  - 1. Definition. ~~For purposes of this Section, the “engineered~~ Engineered pad system” means a treatment and disposal technology characterized by:
    - a. The delivery of ~~treated pretreated~~ wastewater by gravity or pressure distribution to the engineered pad and sand bed assembly, ~~which then disperses the wastewater followed by dispersal of the wastewater into the native soil; and~~
    - b. ~~Passage of the treated wastewater~~ Wastewater movement through a pad and the engineered pad and sand bed assembly by gravity under unsaturated flow conditions to provide additional passive biological treatment; ~~and~~
    - ~~c. Provision of additional passive biological treatment to the wastewater and reduced biomat formation at the inlet absorption surface of the underlying native soil.~~
  - 2. The applicant may use an engineered pad system if:
    - a. The native soil is excessively permeable,
    - b. There is little native soil overlying fractured or excessively permeable rock, or
    - c. The available area is limited for installing a disposal ~~field system~~ works authorized by R18-9-E302.
- B. Performance. An applicant shall ensure that:
  - 1. ~~Any proprietary~~ The engineered pad system ~~previously approved by the Department~~ is designed on the basis that the ~~released~~ treated wastewater released to the native soil meets the following criteria:
    - a. TSS of 50 milligrams per liter, 30-day arithmetic mean;
    - b. BOD<sub>5</sub> of 50 milligrams per liter, 30-day arithmetic mean;
    - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
    - d. Total coliform level of 1,000,000 (Log<sub>10</sub> 6) colony forming units per 100 milliliters, 95th

- percentile-;
2. ~~Any engineered pad not previously approved by the Department is designed on the basis that the treated wastewater released to the native soil does not exceed the performance values specified for the systems described in R18-9-E302. If an applicant wishes to use different performance values, the Department shall review the system as established under R18-9-A309(E). The engineered pad system is designed to meet any other performance, loading rate, and configuration criteria specified in the reviewed product list maintained by the Department as required under R18-9-A309(E).~~
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit design materials and construction specifications for the engineered pad system.
- D. Design requirements. An applicant shall ensure that:
1. Gravity and pressurized wastewater delivery is from a septic tank or intermediate watertight chamber equipped with a pump and controls. ~~The applicant shall ensure that and:~~
    - a. Delivered wastewater is distributed onto the top of the engineered pad system and achieves even distribution by good engineering practice, and
    - b. The dosing rate for pressurized wastewater delivery is at least four doses per day and no more than 24 doses per day-;
  2. The sand bed consists of mineral sand washed to conform to the “Standard Specification for Concrete Aggregates,” (C 33-99a<sup>E1</sup>), which is incorporated by reference in R18-9-E308(D)(2)(a), unless the performance testing and design specifications of the engineered pad manufacturer justify a substitute specification. The applicant shall ensure that:
    - a. The sand bed design provides for the placement of at least ~~six~~ 6 inches of sand bed material below and along the perimeter of each pad, and
    - b. The contact surface between the bottom of the sand bed ~~contact with~~ and the native soil ~~absorption system~~ is level-;
  3. The wastewater distribution system installed on the top of the engineered pad system is covered with a breathable geotextile material that is itself covered with at least 10 inches of backfill.
    - a. The applicant shall ensure that rocks and cobbles are removed from backfill cover and grade the backfill for drainage.
    - b. The applicant may place the engineered pad system above grade, partially bury it, or bury it depending on site and service circumstances-;
  4. The engineered pad system is constructed with durable materials and capable of withstanding stress from installation and operational service; and
  5. At least two inspection ports are installed in the engineered pad system to confirm unsaturated wastewater treatment conditions at diagnostic locations.
- E. Installation requirements. In addition to the applicable requirements specified in R18-9-A313, an applicant shall place sand media to obtain a uniform density of 1.3 to 1.4 grams per cubic centimeter.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, an applicant shall inspect the backfill cover for physical damage or erosion and promptly repair the cover, if necessary.

**R18-9-E310. 4.10 General Permit: Intermittent Sand Filter, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.10 General Permit allows an intermittent sand filter receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
1. Definition. ~~For purposes of this Section, an “intermittent~~ Intermittent sand filter” means a treatment technology characterized by:
    - a. The pressurized delivery of pretreated wastewater to an engineered sand bed in a containment vessel equipped with an underdrain system or designed as a bottomless filter;
    - b. Delivered wastewater dispersed throughout the sand media by periodic doses from the delivery pump to maintain unsaturated flow conditions in the bed; and
    - d. Wastewater that is treated during passage through the media, collected by a bed underdrain chamber, and removed by pump or gravity to the disposal works, or wastewater that percolates downward directly into the native soil as part of a bottomless filter design.
  2. An applicant may use an intermittent sand filter if:
    - a. The native soil is excessively permeable,
    - b. There is little native soil overlying fractured or excessively permeable rock, or

- c. ~~Reduction~~ A reduction in setback distances or minimum vertical separation is desired.
- B. Performance. An applicant shall ensure that:
1. An intermittent sand filter with underdrain system is designed on the basis that it produces treated wastewater that meets the following criteria:
    - a. TSS of 10 milligrams per liter, 30-day arithmetic mean;
    - b. BOD<sub>5</sub> of 10 milligrams per liter, 30-day arithmetic mean;
    - c. Total nitrogen (as nitrogen) of 40 milligrams per liter, 5-month arithmetic mean; and
    - d. Total coliform level or 1000 (Log<sub>10</sub> 3) colony forming units per 100 milliliters, 95th percentile;
  2. An intermittent sand filter with a bottomless filter design is designed ~~on the basis~~ so that the treated wastewater released to the native soil meets the following criteria:
    - a. TSS of 20 milligrams per liter, 30-day arithmetic mean;
    - b. BOD<sub>5</sub> of 20 milligrams per liter, 30-day arithmetic mean;
    - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
    - d. Total coliform level of 100,000 (Log<sub>10</sub> 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit specifications for the media proposed for use in the intermittent sand filter.
- D. Design requirements. An applicant shall ensure that:
1. Pressurized wastewater delivery is from the septic tank or separate watertight chamber with a pump sized and controlled to deliver the pretreated wastewater to the top of the intermittent sand filter. The applicant shall ensure that the dosing rate is at least ~~four~~ 4 doses per day and not more than 24 doses per day;
  2. The pressurized wastewater delivery system provides even distribution in the sand filter through good engineering practice. The applicant shall:
    - a. Specify all necessary controls, pipe, valves, orifices, filter cover materials, gravel, or other distribution media, and monitoring and servicing components in the design documents; and
    - b. Ensure that the cover and topsoil is ~~six~~ 6 to 12 inches in depth and graded to drain;
  3. The sand filter containment vessel is watertight, structurally sound, durable, and capable of withstanding stress from installation and operational service. ~~Intermittent~~ The applicant may place the intermittent sand filter ~~placement may be~~ above grade, partially buried, or fully buried depending on site and service circumstances;
  4. Media used in the intermittent sand filter is mineral sand and that the media is washed and conforms to “Standard Specification for Concrete Aggregates,” (C 33-99a<sup>E1</sup>), which is incorporated by reference in R18-9-E308(D)(2)(a);
  5. The sand media depth is a minimum of 24 inches with the top and bottom surfaces level and the maximum wastewater loading rate is 1.2 gallons per day per square foot of inlet surface at the rated daily design flow;
  6. The underdrain system:
    - a. Is within the containment vessel;
    - b. Supports the filter media and all overlying loads from the unsupported construction above the top surface of the sand media;
    - c. Has sufficient void volume above normal high level of the intermittent sand filter effluent to prevent saturation of the bottom of the sand media by a 24-hour power outage or pump malfunction; and
    - d. Includes necessary monitoring, inspection, and servicing features;
  7. Inspection ports are installed in the distribution media and in the underdrain;
  8. The bottomless filter is designed similar to the underdrain system, except that the sand media is positioned on top of the native soil absorption surface. The applicant shall ensure that companion modifications are made that eliminate the containment vessel bottom and underdrain and relocate the underdrain inspection port to ensure reliable indication of the presence or absence of water saturation in the sand media;
  9. The native soil absorption system is designed to ensure that the linear loading rate does not exceed site disposal capability; and
  10. The bottomless sand filter discharge rate per unit area to the native soil does not exceed the adjusted

- soil ~~application~~ absorption rate for the quality of wastewater specified in subsection (B)(2).
- E. Installation requirements. An applicant shall place the containment vessel, underdrain system, filter media, and pressurized wastewater distribution system in an excavation with adequate foundation and each layer installed to prevent differential settling and promote a uniform density throughout of 1.3 to 1.4 grams per cubic centimeter within the sand media.
- F. Operation and maintenance requirements. The applicant shall follow the applicable requirements specified in R18-9-A313.

**R18-9-E311. 4.11 General Permit: Peat Filter, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.11 General Permit allows a peat filter receiving wastewater treated to a quality equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
1. Definition. ~~For purposes of this Section, a "peat~~ Peat filter" means a disposal technology characterized by:
    - a. The dosed delivery of treated wastewater to the peat bed, which can be a manufactured module or a disposal bed excavated in native soil and filled with compacted peat;
    - b. Wastewater passing through the peat that is further treated by removal of positively charged molecules, filtering, and biological activity before entry into native soil; and
    - c. If the peat filter system is constructed as a disposal bed filled with compacted peat, wastewater that is absorbed into native soil at the bottom and sides of the bed.
  2. An applicant may configure a modular system if a portion of the wastewater that has passed through the peat filter is recirculated back to the pump chamber.
  3. An applicant may use a peat filter system if:
    - a. The native soil is excessively permeable,
    - b. There is little native soil overlying fractured or excessively permeable rock,
    - c. ~~Reduction~~ A reduction in setback distances or minimum vertical separation is desired, or
    - d. Cold weather reduces effectiveness of other disposal sites.
- B. Performance. An applicant shall ensure that a peat filter is designed on the basis that it produces treated wastewater that meets the following criteria:
1. TSS of 15 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 15 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 53 milligrams per liter, 5-month arithmetic mean; and
  4. Total coliform level of 100,000 (Log<sub>10</sub> 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. Specifications for the peat media proposed for use in the peat filter or provided in the peat module, including:
    - a. ~~the porosity, surface area~~ Porosity;
    - b. Degree of humification;
    - c. pH;
    - d. ~~Particle size distribution~~; and
    - e. ~~moisture~~ Moisture content;
    - a.f. A statement of whether the peat is air dried, and whether the peat is from sphagnum moss or bog cotton; and
    - b.g. A description of the degree of decomposition;
  2. Specifications for installing the peat media; and
  3. If a peat module is used:
    - a. The name and address of the manufacturer,
    - b. The model number, and
    - c. A copy of the manufacturer's warranty.
- D. Design requirements.
1. If a pump tank is used to dose the peat module or bed, an applicant shall:
    - a. Ensure that liquid volume meets or exceeds the calculated dose plus the required storage capacity and a reserve volume above the high water alarm to contain the daily design flow volume; and
    - b. Use a control panel with a programmable timer to dose approximately 1/12 of the maximum daily design flow plus the drain-back, if applicable, every two hours.

2. Peat module system. The applicant shall:
    - a. Size the gravel bed supporting the peat filter modules to allow it to act as a disposal field. ~~The applicant shall~~ and ensure that the bed is level, long, and narrow, and installed on contour to optimize lateral movement away from the disposal area;
    - b. Ensure that the minimum module system size is adequate to treat 500 gallons per day. ~~The applicant shall~~ and add modules to accommodate additional design flow;
    - c. For modules designed to allow wastewater flow through the peat filter and base material into underlying native soil, size the base on which the modules rest to accommodate the soil absorption rate of the native soil;
    - d. Place fill over the module so that it conforms to the manufacturer's specification ~~if the specification is consistent with this Chapter~~. If the fill is planted, the applicant shall use only grass or shallow rooted plants; and
    - e. Ensure that the peat media depth is a minimum of 24 inches and the peat is installed with the top and bottom surfaces level. ~~The applicant shall~~ and ensure that the maximum wastewater loading rate is 5.0 gallons per day per square foot of inlet surface at the rated daily design flow.
  3. Peat filter bed system. The applicant shall ensure that:
    - a. The bed is filled with peat derived from sphagnum moss and compacted according to the installation specification;
    - b. The maximum wastewater loading rate is ~~one~~ 1 gallon per day per square foot of inlet surface at the rated daily design flow;
    - c. At least 24 inches of installed peat underlies the distribution piping and 10 to 14 inches of installed peat overlies the piping;
    - d. The cover material over the peat filter bed is slightly mounded to promote runoff of rainfall. The applicant shall not place additional fill over the peat; and
    - e. ~~The peat is derived from decomposed sphagnum moss or roots of the plant Eriophorum (bog cotton)~~. The applicant shall ensure that the The peat is air dried, with a porosity greater than 90% percent, and a surface area at least 190 square meters per gram particle size distribution of 92 to 100 percent passing a No. 4 sieve and less than 8 percent passing a No. 30 sieve.
- E. Installation requirements. The applicant shall:
1. Peat module system.
    - a. Compact the bottom of all excavations for the filter modules, pump, aerator, and other components to provide adequate foundation, slope toward the discharge to minimize ponding, and ensure that the bottom is flat, and free of debris, rocks, and sharp objects. If the excavation is uneven or rocky, the applicant shall use a bed of sand or pea gravel to create an even, smooth surface;
    - b. Place the peat filter modules on a level, ~~six~~ 6 inch deep gravel bed;
    - c. Place backfill around the modules and grade the backfill to divert surface water away from the modules;
    - d. Not place objects on or move objects over the system area that might damage the module containers or restrict airflow to the modules;
    - e. Cover gaps between modules to prevent damage to the system;
    - f. Fit each system with at least one sampling port that allows collection of wastewater at the exit from the final treatment module;
    - g. Provide the modules and other components with anti-buoyancy devices to ensure stability in the event of flooding or high water table conditions; and
    - h. Provide a mechanism for draining the filter module inlet line.
  2. Peat filter bed system. ~~The applicant shall:~~
    - a. Scarify the bottom and sides of the leaching bed excavation to remove any smeared surfaces. ~~The applicant shall:~~ and
      - i. Unless directed by an installation specification consistent with this Chapter, place peat media in the excavation in ~~six~~ 6 inch lifts; and
      - ii. Compact each lift before the next lift is added. The applicant shall take care to avoid compaction of the underlying native soil;
    - b. Lay distribution pipe in trenches cut in the compacted peat. ~~The applicant shall:~~ and
      - i. Ensure that at least ~~three~~ 3 inches of aggregate underlie the pipe to reduce clogging of

- holes or scouring of the peat surrounding the pipe, and
    - ii. Place peat on top of and around the sides of the pipes.
- F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313, the permittee shall inspect the finished grade over the peat filter for proper drainage, protection from damaging loads, and root invasion of the wastewater distribution system and perform maintenance as needed.

**R18-9-E312. 4.12 General Permit: Textile Filter, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.12 General Permit allows a textile filter receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
  - 1. Definition. ~~For purposes of this Section, a “textile~~ Textile filter” means a disposal technology characterized by:
    - a. The flow of wastewater into a packed bed filter in a containment structure or structures. The packed bed filter uses a textile filter medium with high porosity and surface area; and
    - b. The textile filter medium provides further treatment by removing suspended material from the wastewater by physical straining, and reducing nutrients by microbial action.
  - 2. An applicant may use a textile filter in conjunction with a two-compartment septic tank or a two-tank system if the second compartment or tank is used as a recirculation and blending tank. ~~A~~ The applicant shall divert a portion of the wastewater flow from the textile filter ~~shall be diverted~~ back into the second tank for further treatment.
  - 3. An applicant may use a textile filter if nitrogen reduction is desired or as an alternative to a sand filter if delivering sand with the required properties is difficult or expensive.
- B. Performance. An applicant shall ensure that a textile filter is designed on the basis that it produces treated wastewater that meets the following criteria:
  - 1. TSS of 15 milligrams per liter, 30-day arithmetic mean;
  - 2. BOD<sub>5</sub> of 15 milligrams per liter, 30-day arithmetic mean;
  - 3. Total nitrogen (as nitrogen) of 30 milligrams per liter, five-month arithmetic mean, or 15 milligrams, five-month arithmetic mean per liter if documented under subsection (C)(4); and
  - 4. Total coliform level of 100,000 (Log<sub>10</sub> 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
  - 1. The name and address of the filter manufacturer;
  - 2. The filter model number;
  - 3. A copy of the manufacturer’s filter warranty;
  - 4. If the system is for nitrogen reduction to 15 milligrams per liter, five-month arithmetic mean, specifications on the nitrogen reduction performance of the filter system and corroborating third-party test data;
  - 5. The manufacturer’s operation and maintenance recommendations to achieve a 20-year operational life; and
  - 6. If a pump or aerator is required for proper operation, the pump or aerator model number and a copy of the manufacturer’s warranty.
- D. Design requirements. An applicant shall ensure that:
  - 1. The textile medium has a porosity of greater than 80% percent;
  - 2. The wastewater is delivered to the textile filter by gravity flow or a pump;
  - 3. If a pump ~~tank~~ is used to dose the textile ~~module or modules~~ filter, ~~it meets the pump and appurtenances~~ meet the following criteria:
    - a. ~~Liquid volume equals or exceeds the calculated dose plus the required storage capacity and a reserve volume above the high water level alarm to contain the design flow volume, and~~ The textile media loading rate and wastewater recirculation rate are based on calculations that conform with performance data listed in the reviewed product list maintained by the Department as required under R18-9-A309(E).
    - b. The liquid volume of the tank and recirculation components equals or exceeds the calculated dose plus the required storage capacity and a reserve volume above the high water level alarm to contain the design flow volume, and
    - ~~b.c.~~ A control panel with a programmable timer is used to dose approximately 1/12 of the maximum daily design flow (plus the drain back if applicable) every two hours the textile media at the applicable loading rate and wastewater recirculation rate.

- E. Installation requirements. An applicant shall:
  1. Before placing the filter modules, slope the bottom of the excavation for the modules toward the discharge point to minimize ponding;
  2. Ensure that the bottom of all excavations for the filter modules, pump, aerator, or other components is level and free of debris, rocks, and sharp objects. If the excavation is uneven or rocky, the applicant shall use a bed of sand or pea gravel to create an even, smooth surface;
  3. Provide the modules and other components with anti-buoyancy devices to ensure they remain in place in the event of high water table conditions; and
  4. Provide a mechanism for draining the filter module inlet line.
- F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313, the permittee shall not flush corrosives or other materials known to damage the textile material into any drain that transmits wastewater to the on-site wastewater treatment facility.

**R18-9-E313. 4.13 General Permit: RUCK® Denitrifying System Using Separated Wastewater Streams, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.13 General Permit allows ~~residential applications~~ for a RUCK® separated wastewater streams, denitrifying system for a dwelling.
  1. Definition. ~~For purposes of this Section a~~ “RUCK® Separated wastewater streams, denitrifying system” means a proprietary gravity flow treatment and disposal system for residential applications dwellings that requires ~~segregated~~ separate plumbing drains for conducting dishwater dishwasher, kitchen sink, and toilet flush water to a black water tank wastewater treatment tank “A” and all other wastewater to a ~~gray water tank, a wastewater treatment tank “B.”~~
    - a. Treated wastewater from ~~each tank tanks “A” and “B”~~ is delivered to a ~~proprietary, an~~ engineered composite disposal bed system that includes an upper distribution pipe to deliver treated ~~black water wastewater from tank “A”~~ to a ~~proprietary, columnar celled, sand-filled bed.~~
    - b. The wastewater drains downward into a sand bed, then into a pea gravel bed with an internal distribution pipe system that delivers the treated ~~gray water wastewater from tank “B.”~~
    - c. The entire composite bed is constructed within an excavation about ~~six~~ 6 feet deep.
    - d. The system ~~typically~~ operates under gravity flow from ~~the black water and gray water pretreatment tanks tanks “A” and “B.”~~
    - e. ~~A proprietary~~ An engineered sampling assembly is installed at the midpoint of the disposal line run and at the base of the composite bed during construction to monitor system performance.
  2. An applicant may use a RUCK® separated wastewater streams, denitrifying system, which is typically limited to soil conditions where a standard system described in R18-9-E302 is acceptable, ~~if the where~~ total nitrogen content in the wastewater is reduced reduction is required before release to the native soil.
- B. Performance. An applicant shall ensure that a RUCK® separated wastewater streams, denitrifying system is designed on the basis that the treated wastewater released to the native soil meets the following criteria:
  1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 30 milligrams per liter, five-month arithmetic mean, or 15 milligrams per liter, five-month arithmetic mean, if demonstrated under subsection (D); and
  4. Total coliform level of 1,000,000 (Log<sub>10</sub> 6) colony forming units per 100 milliliters, 95th percentile.
- C. Reference design. An applicant may design and install a RUCK® separated wastewater streams, denitrifying system achieving the performance requirements specified in subsection (B) by following a reference design on file with the Department. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.
- D. Alternative design. An applicant may submit an alternative design to the RUCK® separated wastewater streams, denitrifying system if, following the requirements in R18-9-A312(G), the design achieves equal or better performance than that specified in subsection (B).
  1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.



3. If ~~nitrogen reduction to a level~~ total nitrogen performance from 15 to less than 30 milligrams per liter, five-month arithmetic mean, is proposed, the applicant shall ensure that the supplemental information includes specifications on system nitrogen reduction performance and corroborating third-party test data.

**R18-9-E314. 4.14 General Permit: Sewage Vault, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.14 General Permit allows a sewage vault that receives sewage.
  1. ~~An applicant pumping a sewage vault for disposal shall comply with state and local laws, rules, and ordinances.~~
  2. 1. An applicant may use a sewage vault if ~~there is~~ a severe site constraint ~~that prevents installation of a conventional septic tank and disposal field system works or any other alternative provided by general permit another on-site wastewater treatment facility from being installed.~~
  3. 2. An applicant may install a sewage vault as a temporary measure if ~~the applicant will install connection to a sewer or installation or~~ another on-site wastewater treatment facility occurs within two years.
- B. Performance. An applicant shall not allow a discharge from a sewage vault to the native soil or land surface. The applicant shall pump and dispose of vault contents at a sewage treatment facility or other sewage disposal mechanism allowed by law.
- C. Restrictions. An applicant shall not install a sewage vault:
  1. If a high groundwater table impinges on the vault;
  2. Unless the applicant has a service contract from a licensed waste hauler to periodically pump out the vault; or
  3. If the capacity of the vault is less than 450 gallons per bedroom or 75 gallons per fixture unit, whichever is larger.
- D. Reference design.
  1. An applicant may design and install a sewage vault that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed storage vault with the applicant's submittal of the Notice of Intent to Discharge.
- E. Alternative design. An applicant may submit an alternative to the reference design for a sewage vault if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (B).
  1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed storage vault with the applicant's submittal of the Notice of Intent to Discharge.

**R18-9-E315. 4.15 General Permit: Aerobic System ~~with Subsurface Disposal~~, Less Than 3000 Gallons Per Day Design Flow**

- A. ~~A 4.15 General Permit allows for an aerobic system that consists of an aerator for treatment and a subsurface absorption field for disposal of treated wastewater.~~
  1. ~~Definition. For purposes of this Section, an "aerobic system with subsurface disposal" means the mechanical introduction of oxygen to wastewater, followed by clarification and pressure or gravity distribution to a subsurface soil absorption field.~~
  2. ~~An applicant may use an aerobic system with subsurface disposal if:~~
    - a. ~~Enhanced biochemical processing is needed to treat wastewater with high organic content,~~
    - b. ~~A soil condition is not adequate to allow installation of a standard septic tank and disposal field as prescribed in R18-9-E302,~~
    - c. ~~A highly treated and disinfected wastewater is needed, or~~
    - d. ~~Nitrogen removal is needed and the design meets other requirements of this general permit.~~
- B. ~~Performance. An applicant shall ensure that an aerobic system with subsurface disposal is designed on the basis that the treated wastewater released to the native soil meets the following criteria:~~
  1. ~~TSS of 30 milligrams per liter, 30-day arithmetic mean;~~
  2. ~~BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;~~
  3. ~~Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean, or 15 milligrams, five-month arithmetic mean per liter if documented under subsection (C); and~~

4. ~~Total coliform level of 300,000 (Log<sub>10</sub> 5.5) colony forming units per 100 milliliters, 95th percentile.~~
- C. ~~Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:~~
1. ~~Evidence of performance specified in subsection (B);~~
  2. ~~The name and address of the treatment unit manufacturer;~~
  3. ~~The model number;~~
  4. ~~A copy of the manufacturer's warrantee and operation and maintenance recommendations to achieve performance for a 20-year life; and~~
  5. ~~If nitrogen reduction to a level from 15 to less than 53 milligrams per liter is proposed, specifications on system nitrogen reduction performance and corroborating third party test data.~~
- D. ~~Design requirements. An applicant shall ensure that the wastewater is delivered to the aerobic treatment unit by gravity flow either directly or by a lift pump. The Director shall require an interceptor or other pretreatment device if needed to meet the performance criteria specified in subsection (B) or the manufacturer recommends a device if a garbage disposal appliance is used.~~
- E. ~~Installation requirements. An applicant shall ensure that:~~
1. ~~The installation of the aerobic treatment components conforms to manufacturer's specifications that are consistent with this Chapter and the design documents specified in the Provisional Verification of General Permit Conformance; and~~
  2. ~~Excavation and foundation work, and backfill placement is performed to prevent differential settling and adverse drainage conditions.~~
- F. ~~Operation and maintenance requirements. The permittee shall follow the applicable requirements in R18-9-A313.~~
- A. A 4.15 General Permit allows for an aerobic system that consists of an aerator for treatment.
1. Definitions. For purposes of this Section:
    - a. "Aerobic system with subsurface disposal" means the mechanical introduction of oxygen to wastewater, followed by clarification and pressure or gravity distribution to a subsurface disposal works.
    - b. "Aerobic system with surface disposal" means the mechanical introduction of oxygen to wastewater, followed by clarification, disinfection using a technology authorized in R18-9-E320, and disposal to the land surface.
  2. An applicant may use an aerobic system if:
    - a. Enhanced biochemical processing is needed to treat wastewater with high organic content,
    - b. A soil condition is not adequate to allow installation of a standard septic tank and disposal works as allowed under R18-9-E302,
    - c. A highly treated and disinfected wastewater is needed, or
    - d. Nitrogen removal from the wastewater is needed and removal performance of the system is documented according to subsection (B)(2)(e).
- B. Aerobic system with subsurface disposal.
1. Performance. An applicant shall ensure that the system is designed so that the treated wastewater released to the native soil meets the following criteria:
    - a. TSS of 30 milligrams per liter, 30-day arithmetic mean;
    - b. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
    - c. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean, or as low as 15 milligrams, five-month arithmetic mean per liter, if documented under subsection (B)(2)(e); and
    - d. Total coliform level of 300,000 (Log<sub>10</sub> 5.5) colony forming units per 100 milliliters, 95th percentile.
  2. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
    - a. The name and address of the aerobic system manufacturer;
    - b. The model number of the aerobic system;
    - c. Evidence of performance specified in subsection (B)(1);
    - d. A copy of the manufacturer's warranty and operation and maintenance recommendations to achieve performance over a 20-year operational life; and
    - e. Specifications and third party test data corroborating nitrogen reduction to the intended level if the aerobic system is to be used for removal of nitrogen from the wastewater.

3. Design requirements. An applicant shall ensure that:
    - a. The wastewater is delivered to the aerobic treatment unit by gravity flow either directly or by a lift pump, and
    - b. An interceptor or other pretreatment device is required if necessary to meet the performance criteria specified in subsection (B)(1) or if recommended by the manufacturer for pretreatment if a garbage disposal appliance is used.
  4. Installation requirements. An applicant shall ensure that:
    - a. The installation of the aerobic treatment components conforms to manufacturer's specifications that are consistent with Articles 1, 2, and 3 of this Chapter and the design documents specified in the Construction Authorization; and
    - b. Excavation, foundation work, and backfill placement is performed to prevent differential settling and adverse drainage conditions.
  5. Operation and maintenance requirements. The permittee shall:
    - a. Follow the applicable requirements in R18-9-A313, and
    - b. Ensure that filters are cleaned and replaced as necessary.
- C. Aerobic system with surface disposal.
1. Performance. An applicant shall ensure that the system:
    - a. Always distributes disinfected wastewater to the land surface and any discharge of raw or partially treated wastewater is prevented, and
    - b. Is designed so that the treated wastewater released to the native soil meets the following criteria:
      - i. TSS of 30 milligrams per liter, 30-day arithmetic mean;
      - ii. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
      - iii. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean, or as low as 15 milligrams, five-month arithmetic mean per liter, if documented under subsection (B)(2)(e); and
      - iv. Nominally free of coliform. Disinfection is by a method established under R18-9-E320.
  2. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
    - a. The name and address of the aerobic system manufacturer;
    - b. The model number of the aerobic system;
    - c. Evidence of performance specified in subsection (B)(1);
    - d. A copy of the manufacturer's warranty and operation and maintenance recommendations to achieve performance over a 20-year operational life; and
    - e. Specifications and third party test data corroborating nitrogen reduction to the intended level if the aerobic system is to be used for removal of nitrogen from the wastewater.
  3. Design requirements. An applicant shall ensure that:
    - a. The wastewater is delivered to the aerobic treatment unit by gravity flow either directly or by a lift pump,
    - b. An interceptor or other pretreatment device is required if necessary to meet the performance criteria specified in subsection (B)(1) or if recommended by the manufacturer for pretreatment if a garbage disposal appliance is used,
    - c. Auxiliary safety mechanisms are incorporated to ensure that no raw or partially treated wastewater is discharged to the land surface, and
    - d. The system incorporates sprinklers, bubbler heads, or other components that optimize the rate of wastewater dispersal and prevent ponding on the land surface.
  4. Installation requirements. An applicant shall ensure that:
    - a. The installation of the aerobic treatment components conforms to manufacturer's specifications that are consistent with Articles 1, 2, and 3 of this Chapter and the design documents specified in the Construction Authorization; and
    - b. Excavation, foundation work, and backfill placement is performed to prevent differential settling and adverse drainage conditions.
  5. Operation and maintenance requirements. The permittee shall:
    - a. Follow the applicable requirements in R18-9-A313, and
    - b. Ensure that filters are cleaned and replaced as necessary.

D. Reference design.

1. An applicant may design and install an aerobic system with subsurface or surface disposal that achieves the applicable performance requirements by following a reference design on file with the Department.
2. An applicant using a reference design shall include with the Notice of Intent to Discharge a form approved by the Department that provides supplemental information that is specific to the proposed installation.

**R18-9-E316. 4.16 General Permit: Aerobic System with Surface Disposal, Less Than 3000 Gallons Per Day Design Flow**

~~A. A 4.16 General Permit allows an aerobic system that consists of an aerator for treatment and surface absorption field for disposal of treated wastewater.~~

1. ~~Definition. For purposes of this Section, an “aerobic system with surface disposal” means:~~
  - a. ~~Mechanical introduction of oxygen to wastewater followed by clarification and disposal to the land surface, and~~
  - b. ~~The wastewater is disinfected using a technology authorized in R18-9-E320 before disposal to the land surface.~~
2. ~~An applicant may use an aerobic system with surface disposal if:~~
  - a. ~~Enhanced biochemical processing is needed to treat wastewater with high organic content,~~
  - b. ~~A soil condition is not adequate to allow installation of a standard septic tank and disposal field as prescribed in R18-9-E302, or~~
  - c. ~~A highly treated and disinfected wastewater is needed.~~

~~B. Performance. An applicant shall ensure that an aerobic system with surface disposal is designed on the basis that the treated wastewater released to the native soil meets the following criteria:~~

1. ~~TSS of 30 milligrams per liter, 30-day arithmetic mean;~~
2. ~~BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;~~
3. ~~Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean;~~
4. ~~A total coliform level of Log<sub>10</sub>-0 colony forming units per 100 milliliters, 99th percentile. Disinfection is by a method established under R18-9-E320.~~

~~C. Additional requirements. An applicant shall:~~

1. ~~Ensure that treated wastewater complies with any applicable National Pollution Discharge Elimination System permit limits;~~
2. ~~Prevent discharge of inadequately treated wastewater to the environment by means of a fail safe mechanism, included in the system design; and~~
3. ~~Use sprinkler, bubbler heads, or other components that provide dispersal to optimize wastewater loading rates and prevent ponding on the land surface.~~

~~D. Reference design.~~

1. ~~An applicant may design and install an aerobic system with surface disposal that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.~~

~~E. Alternative design. An applicant may submit an alternative to the reference design for an aerobic system with surface disposal if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (B):~~

1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant’s submittal of the Notice of Intent to Discharge.~~

**R18-9-E316. 4.16 General Permit: Nitrate-reactive Media Filter, Less Than 3000 Gallons Per Day Design Flow**

~~A. A 4.16 General Permit allows a nitrate-reactive media filter receiving pretreated wastewater.~~

1. ~~Definition. “Nitrate-reactive media filter” means a treatment technology characterized by:~~
  - a. ~~Application of pretreated, nitrified wastewater to a packed bed filter in a containment structure. The packed bed filter consists of nitrate-reactive media that receives pretreated~~

- wastewater under specified design and operational conditions; and
- b. The ability of the nitrate-reactive filter to further treat the nitrified wastewater by removing total nitrogen by chemical and physical processes.
  2. An applicant shall use a nitrate-reactive media filter with:
    - a. Necessary treatment works to pretreat the wastewater; and
    - b. Appropriate disposal works.
  3. An applicant may use a nitrate-reactive media filter if nitrogen reduction is required.
- B. Restrictions. The applicant shall not use any product to supply pretreated wastewater to the nitrate-reactive media filter unless:
1. The product meets the pretreatment requirements for the filter based on product performance information in the product listing; and
  2. The product is listed in the reviewed product list maintained by the Department as required under R18-9-A309(E).
- C. Performance. An applicant shall ensure that a nitrate-reactive media filter is designed so that it produces treated wastewater that does not exceed the following criteria:
1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 10 milligrams per liter, five-month arithmetic mean; and
  4. Total coliform level of 1,000,000 (Log<sub>10</sub> 6) colony forming units per 100 milliliters, 95th percentile.
- D. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit:
1. The name and address of the filter manufacturer;
  2. The filter model number;
  3. The manufacturer's requirements for pretreatment as listed in the reviewed product list maintained by the Department as required under R18-9-A309(E) for the nitrate-reactive media filter;
  4. The manufacturer's specifications for design, installation and operation for the nitrate-reactive media filter system and appurtenances;
  5. The manufacturer's warranty for the nitrate-reactive media filter system and appurtenances;
  6. The manufacturer's operation and maintenance recommendations to achieve a 20-year operational life for the nitrate-reactive media filter system and appurtenances; and
  7. The manufacturer name and model number for all appurtenances that significantly contribute to achieving the performance specified in subsection (C).
- E. Design requirements. In addition to the design requirements specified in R18-9-A312, an applicant shall ensure that:
1. The nitrate-reactive media and appurtenances conform with manufacturer's specifications;
  2. The loading rate of pretreated wastewater to the nitrate-reactive media inlet surface meets the manufacturer's specification and does not exceed 5.00 gallons per day per square foot of media inlet surface area; and
  3. The bed packed with nitrate reactive media is at least 24 inches thick.
- F. Installation requirements. In addition to the installation requirements specified in R18-9-A313(A), an applicant shall ensure that:
1. The nitrate-reactive media filter and appurtenances are installed according to manufacturer's specifications to achieve proper wastewater treatment, hydraulic performance, and operational life.
  2. Anti-buoyancy devices are installed when high water table or extreme soil saturation conditions are likely during the facility operational life.
- G. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313(B) and the manufacturer's specifications, the permittee shall not dispose of corrosives or other materials into the on-site wastewater treatment facility that are known to damage the nitrate-reactive media filter system.

**R18-9-E317. 4.17 General Permit: Cap System, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.17 General Permit allows a cap fill cover over a conventional ~~shallow trench disposal field~~ receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
1. Definition. ~~For purposes of this Section, a "cap~~ Cap system" means a disposal technology characterized by:
    - a. A soil cap, consisting of engineered fill placed over a trench that is reduced in depth

- compared to a ~~standard~~ trench allowed by R18-9-E302; and
- b. A design that compensates for reduced trench depth by maintaining and enhancing the infiltration of wastewater into native soil through the trench sidewalls.
2. An applicant may use a cap system if there is little native soil overlying fractured or excessively permeable rock or a high water table does not allow the minimum vertical separation to be met by a system authorized by R18-9-E302.
- B. Performance. An applicant shall ensure that the design soil absorption rate, ~~disposal density~~, and vertical separation complies with this Chapter for a ~~shallow~~ trench, based on the following performance, unless additional pretreatment is provided:
1. TSS of 75 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 150 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
  4. Total coliform level of 100,000,000 (Log<sub>10</sub> 8) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B); and R18-9-A309(B), an applicant shall submit specifications for the proposed cap fill material.
- D. Design requirements. An applicant shall ensure that:
1. ~~An applicant shall ensure that the~~ The soil texture from the natural grade to the depth of the layer or the water table that limits the soil for unsaturated wastewater flow is no finer than silty clay loam.;
  2. ~~An applicant shall ensure that cap~~ Cap fill material used is free of debris, stones, frozen clods, or ice, and is the same as or one soil group finer than that of the disposal site material, except that the applicant shall not use fill material finer than clay loam ~~shall not be used~~ as an additive.;
  3. Trench construction. ~~The applicant shall ensure that:~~
    - a. The trench bottom is at least 12 inches below the bottom of the disposal pipe and not more than 24 inches below the natural grade, and the trench bottom and disposal pipe are level;
    - b. The aggregate cover over the disposal pipe is ~~two~~ 2 inches thick and the top of the aggregate cover is level and not more than ~~nine~~ 9 inches above the natural grade;
    - c. The cap fill cover above the top of the aggregate cover is at least ~~nine~~ 9 inches but not more than 18 inches thick and has sloped sides not more than one vertical to three horizontal. The applicant shall ensure that:
      - i. The horizontal extent of the finished fill edges is at least 10 feet beyond the nearest trench sidewall or endwall; and
      - ii. Intersecting fill surfaces are sloped to route surface drainage around the ends of the trench.;
    - d. The criteria for trench length, bottom width and spacing, and disposal pipe size is the same as that for the ~~shallow~~ trench system prescribed in R18-9-E302;
    - e. Permeable geotextile fabric is placed on the aggregate top, trench end, and sidewalls extending above natural grade;
    - f. The native soil within the disposal site and the adjacent downgradient area to a 50 foot horizontal distance does not exceed a 12% percent slope if the top of the aggregate cover extends above the natural grade at any location along the trench length. The applicant shall ensure that the slope within the disposal site and the adjacent downgradient area to a 50 foot horizontal distance does not exceed 20% percent if the top of the aggregate cover does not extend above the natural grade;
    - g. The fill material is compacted to a density of 90% percent of the native soil if the invert elevation of the disposal pipe is at or above the natural grade at any location along the trench length;
    - h. At least one observation port is installed to the bottom of each cap fill trench;
    - i. The effective absorption area for each trench is the sum of the trench bottom area and the sidewall area. The height of the sidewall used for calculating the sidewall area is the vertical distance between the trench bottom and the lowest point of the natural land surface along the trench length; and
    - j. The applicant may apply the correction factors for soil absorption rate under R18-9-A312(D)(3) and minimum vertical separation under R18-9-A312(E) if additional wastewater pretreatment is provided.
- E. Installation requirements. An applicant shall prepare the disposal site when high soil moisture is not present

and equipment operations do not create platy soil conditions. The applicant shall:

1. Plow or scarify the fill area to disrupt the vegetative mat while avoiding smearing,
  2. Construct trenches as specified in subsection (D)(3),
  3. Scarify the site and apply part of the cap fill to the fill area and blend the fill with the scarified native soil within the contact layers, and
  4. Follow the construction design specified in the ~~Provisional Verification of General Permit Conformance Construction Authorization~~.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, the permittee shall inspect and repair the cap fill and other surface features as needed to ensure proper disposal function, proper drainage of surface water, and prevention of damaging loads on the cap.

**R18-9-E318. 4.18 General Permit: Constructed Wetland, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.18 General Permit allows a constructed wetland receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
1. Definition. ~~A constructed~~ “Constructed wetland” is means a treatment technology characterized by a lined excavation, filled with a medium for growing plants and planted with marsh vegetation. The treated wastewater flows horizontally through the medium in contact with the aquatic plants.
  - ~~2-~~ a. As the wastewater flows through the wetland system, additional treatment is provided by filtering, settling, volatilization, and evapotranspiration.
  - ~~3-~~ b. The wetland system allows microorganisms to break down organic material and plants to take up nutrients and other pollutants.
  4. c. The wastewater treated by a wetland system is discharged to a subsurface soil disposal system.
  - ~~5-2.~~ A An applicant may use a constructed wetland ~~is considered~~ if further wastewater treatment is needed before disposal.
- B. Performance. An applicant shall ensure that a constructed wetland is designed on the basis that it produces treated wastewater that meets the following criteria:
1. TSS of 20 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 20 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 45 milligrams per liter, five-month arithmetic mean; and
  4. Total coliform level of 100,000 (Log<sub>10</sub> 5) colony forming units per 100 milliliters, 95th percentile.
- C. Reference design.
1. An applicant may design and install a constructed wetland that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed constructed wetland with the applicant’s submittal of the Notice of Intent to Discharge.
- D. Alternative design. An applicant may submit an alternative to the reference design for a constructed wetland if, following the requirements under R18-9-A312(G), the design achieves the performance requirements in subsection (B).
1. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
  2. The applicant shall file a form provided by the Department for supplemental information about the proposed constructed wetland with the applicant’s submittal of the Notice of Intent to Discharge.
- E. Operation and maintenance. The permittee shall operate and maintain the system as required in R18-9-A313.

**R18-9-E319. 4.19 General Permit: Sand Lined Trench, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.19 General Permit allows a sand lined trench receiving wastewater treated to a level equal to or better than that provided by a ~~4.02 General Permit~~ septic tank permitted under R18-9-E302.
1. Definition. ~~For purposes of this Section, a “sand~~ Sand lined trench” means a disposal technology characterized by:
    - a. Engineered placement of sand or equivalently graded glass in trenches excavated in native soil,
    - b. Wastewater dispersed throughout the media by a timer-controlled pump in periodic uniform doses that maintain unsaturated flow conditions, and
    - c. Wastewater treated during travel through the media and absorbed into the native soil at the bottom of the trench.

2. An applicant may use a sand lined trench if:
  - a. The native soil is excessively permeable,
  - b. There is little native soil overlying fractured or excessively permeable rock, or
  - c. Reduction in setback distances, or minimum vertical separation is desired.
- B. Performance. An applicant shall ensure that a sand lined trench is designed on the basis that treated wastewater released to the native soil meets the following criteria:
  1. TSS of 20 milligrams per liter, 30-day arithmetic mean;
  2. BOD<sub>5</sub> of 20 milligrams per liter, 30-day arithmetic mean;
  3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
  4. Total coliform level of 100,000 (Log<sub>10</sub> 5) colony forming units per 100 milliliters, 95th percentile.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B) and R18-9-A309(B), an applicant shall submit specifications for the proposed media in the trench.
- D. Design requirements.
  1. An applicant shall ensure that media used in the trench is mineral sand, crushed glass, or cinder sand and that:
    - a. The media conforms to “Standard Specifications for Concrete Aggregates,” (C-33-99a<sup>E1</sup>), which is incorporated by reference in R18-9-E308(D)(2)(a), “Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing,” (C-117-95), approved March 15, 1995, or an equivalent approved method. This information is incorporated by reference and does not include any later amendments or editions of the incorporated ~~matter~~ material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 ~~and the Office of the Secretary of State~~, or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959; and
    - b. Sieve analysis complies with the “Standard Test Method for Materials Finer than 75-µm (No. 200) Sieve in Mineral Aggregates by Washing,” (C-117-95), which is incorporated by reference in subsection (D)(1)(a), or an equivalent approved method.
  2. Trenches. The applicant shall ensure that:
    - ~~a.~~ a. Distribution pipes are capped on the end;
    - ~~a.b.~~ b. The spacing between trenches is at least two times the ~~depth of the trench bottom below finished grade~~ distance between the bottom of the distribution pipe and the bottom of the trench or 5 feet, whichever is greater;
    - ~~b.c.~~ c. The inlet filter media surface, wastewater distribution pipe, and bottom of the trench is level and the maximum effluent loading rate is not more than 1.0 gallon per day per square foot of sand media inlet surface;
    - ~~c.d.~~ d. The depth of sand below the gravel layer containing the distribution system is at least 24 inches;
    - ~~d.e.~~ e. The gravel layer containing the distribution system is five to 12 inches thick, at least 36 inches wide, and level;
    - ~~e.f.~~ f. Permeable geotextile fabric is placed at the base of and along the sides of the gravel layer, as necessary. ~~The applicant shall ensure that and:~~
      - i. Geotextile fabric is placed on top of the gravel layer, and
      - ii. Any cover soil placed on top of the geotextile fabric is capable of maintaining vegetative growth while allowing passage of air;
    - ~~f.g.~~ g. At least one observation port is installed to the bottom of each sand lined trench;
    - ~~g.h.~~ h. If the trench is installed in excessively permeable soil or rock, at least ~~one~~ 1 foot of loamy sand is placed in the trench below the filter media. The minimum vertical separation distance is measured from the bottom of the loamy sand; and
    - ~~h.i.~~ i. The trench design is based on the design flow, native soil absorption area of the trench, minimum vertical separation below the trench bottom, design effluent infiltration rate at the top of the sand fill, and the adjusted soil absorption rate for the final effluent quality;
  3. Dosing system. The applicant shall ensure that the dosing system consists of a timer-controlled pump, electrical components, and distribution network and that:
    - a. Orifice spacing on the distribution piping does not exceed ~~four~~ 4 square feet of media infiltrative surface area per orifice, and
    - b. The dosing rate is at least four doses per day and not more than 24 doses per day.



- E. Installation requirements. An applicant shall ensure that the filter media ~~shall~~ is placed in the trench to prevent differential settling and promote a uniform density throughout of 1.3 to 1.4 grams per cubic centimeter.
- F. Operation and maintenance requirements. In addition to the applicable requirements specified in R18-9-A313, the permittee shall ensure that:
  1. The septic tank filter and pump tank are inspected and cleaned;
  2. The dosing tank pump screen, pump switches, and floats are cleaned yearly and any residue is disposed of according to local, state, or federal requirements; and
  3. Lateral lines are flushed and the liquid waste discharged into the treatment system headworks.

**R18-9-E320. 4.20 General Permit: Disinfection Devices, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.20 General Permit allows a disinfection device that receives wastewater from a septic tank or other treatment device of an on-site wastewater treatment facility, authorized by a general permit, and reduces the level of harmful microorganisms in the wastewater during passage through the device.
  1. The disinfection device kills the microorganisms by exposing the wastewater to heat, radiation, or a chemical disinfectant.
  2. Some means of disinfection require detention before discharge.
  3. ~~A An applicant may use a disinfection device is considered~~ if a reduction in harmful microorganisms, as measured by the total coliform level, is needed for surface or near surface disposal of the wastewater or if reduction of the minimum vertical separation distance specified in R18-9-A312(E) is desired.
- B. Restrictions.
  1. Unless designed to operate without electricity, an applicant shall not install a disinfection device if electricity is not permanently available at the site.
  2. This general permit does not authorize a disinfection device that releases chemical disinfectants or disinfection byproducts harmful to plants or wildlife in the discharge area or causes a violation of an Aquifer Water Quality Standard.
- C. Performance. An applicant shall ensure that:
  1. ~~An auxiliary wastewater control mechanism or operational process is incorporated to prevent a release of inadequately treated wastewater;~~
  - ~~1.2.~~ The required performance of a disinfection device is dependent on meets the level of disinfection needed for ~~a particular~~ the type of disposal; and
  - ~~2.3.~~ For an on-site device wastewater treatment facility with discharge to the land surface, the disinfection device in conjunction with all preceding treatment processes produces treated wastewater that meets the following criteria is nominally free of coliform bacteria, is clear and odorless, has a dissolved oxygen content of at least 6 milligrams per liter, and:
    - a. ~~A total coliform level of Log<sub>10</sub> 0 colony forming units per 100 milliliters, 99th percentile. Complies with the following:~~
      - i. Dosage requirements as indicated in the following table as available chlorine:

<u>pH of Wastewater</u>	<u>Required Concentration of Available Chlorine in Wastewater (milligrams per liter)</u>	
	<u>Aerobic Treatment Unit</u>	<u>Sand and Peat Filter and Other Secondary Units</u>
<u>6</u>	<u>15 - 30</u>	<u>6 - 10</u>
<u>7</u>	<u>20 - 35</u>	<u>10 - 20</u>
<u>8</u>	<u>30 - 45</u>	<u>20 - 35</u>

- ii. Contact time. The minimum chlorine contact time is 15 minutes for wastewater at 20°C and 30 minutes for wastewater at 10°C, based on a flow equal to 4 times the daily design flow;
- iii. Contact chambers. Contact chambers are watertight and made of plastic, fiberglass, or other durable material and are configured to prevent short-circuiting;
- b. Dissolved oxygen content of at least six milligrams per liter; For a device that disinfects by

another method, dose and contact time are determined to reliably produce treated wastewater that is nominally free of coliform bacteria, based on a flow equal to four times the daily design flow.

~~e. Clear and odorless appearance.~~

D. Operation and maintenance. A permittee shall: ensure that, if the disinfection device relies on the addition of chemicals for disinfection, the device is operated to minimize the discharge of disinfection chemicals while achieving the required level of disinfection.

1. If the disinfection device relies on the addition of chemicals for disinfection, ensure that the device is operated to minimize the discharge of disinfection chemicals while achieving the required level of disinfection; and
2. ~~Incorporate a fail-safe mechanism to prevent inadequately treated wastewater from being discharged. Ensure that the disinfection device is inspected and maintained at least once every 3 months by a qualified person.~~

~~E. Reference design.~~

1. ~~An applicant may design and install a disinfection device that achieves the performance requirements in subsection (C) by following a reference design on file with the Department.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.~~

~~F. Alternative design. A permittee may submit an alternative to the reference design for a disinfection device if, following the requirements in R18-9-A312(G), the design achieves the performance requirements in subsection (C).~~

1. ~~The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.~~
2. ~~The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.~~

#### **R18-9-E321. 4.21 General Permit: Sequencing Batch Reactor, Less Than 3000 Gallons Per Day Design Flow**

A. A 4.21 General Permit allows a sequencing batch reactor that consists of at least two vessels, a receiving vessel, and a process vessel, in which the key unit treatment processes, such as aeration and settlement, are sequenced one after the other in the process vessel.

1. The treatment process is similar to that which occurs in aerobic systems described in other general permits except that in an aerobic system, separate vessels or partitions of the vessel are used for each unit treatment step.
2. ~~Sequencing~~ An applicant may use a sequencing batch reactor if:
  - a. Enhanced biochemical processing is needed to treat wastewater with high organic content,
  - b. A soil condition is not adequate to allow installation of a standard septic tank and disposal field works as prescribed in R18-9-E302, ~~or~~
  - c. A more highly treated and disinfected wastewater is needed, ~~or~~
  - d. Nitrogen removal is needed to achieve a level of total nitrogen in the wastewater as low as 15 mg/l and the design meets other requirements of this general permit.

B. Performance. An applicant shall ensure that a sequencing batch reactor is designed on the basis that it produces treated wastewater that meets the following criteria:

1. TSS of 30 milligrams per liter, 30-day arithmetic mean;
2. BOD<sub>5</sub> of 30 milligrams per liter, 30-day arithmetic mean;
3. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean. ~~If a total nitrogen level from 15 to 53 milligrams per liter is proposed, the applicant shall submit the specifications on system nitrogen reduction performance and corroborating third party test data with the Notice of Intent~~ The applicant shall submit, with the Notice of Intent to Discharge, specifications and third party test data corroborating nitrogen reduction to the intended level if the aerobic treatment unit is used to remove nitrogen from the wastewater; and
4. ~~Total coliform level of 300,000 (Log<sub>10</sub>-5.5) colony forming units per 100 milliliters, 95th percentile~~ Norminally free of coliform.

C. Reference design.

1. An applicant may design and install a sequencing batch reactor that achieves the performance requirements in subsection (B) by following a reference design on file with the Department.
2. The applicant shall file a form provided by the Department for supplemental information about the

- proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- D. Alternative design.
1. An applicant may submit an alternative to the reference design for a sequencing batch reactor that achieves equal or better performance than that specified in subsection (B), by following the requirements in R18-9-A312(G).
  2. The Department shall consider the submittal of an alternative design as one design change to establish the applicable fee under 18 A.A.C. 14.
  3. The applicant shall file a form provided by the Department for supplemental information about the proposed system with the applicant's submittal of the Notice of Intent to Discharge.
- E. Operation and maintenance. The permittee shall operate and maintain the system as required in R18-9-A313.

**R18-9-E322. 4.22 General Permit: Subsurface Drip Irrigation Disposal, Less Than 3000 Gallons Per Day Design Flow**

- A. A 4.22 General Permit allows a subsurface drip irrigation disposal system that receives high quality wastewater from an advanced on-site wastewater treatment facility ~~and dispenses it to dispense the wastewater~~ to an irrigation system that is buried at a shallow depth in native soil. A 4.22 General Permit includes the requirements for a pressure distribution system under R18-9-E304. The Director may require a thin layer of soil or engineered fill cover on the surface of the native soil, depending on wastewater quality delivered to the drip emitters.
1. The drip irrigation disposal system is designed to disperse the treated wastewater into the soil under unsaturated conditions by pressure distribution and timed dosing.
  2. A subsurface drip irrigation disposal system reduces the downward percolation of wastewater by enhancing evapotranspiration to the atmosphere.
  3. ~~Drip~~ An applicant may use a drip irrigation disposal systems ~~are considered if to mitigate site constraints, such as~~ high groundwater, shallow soils, slowly permeable soils, ~~or~~ highly permeable soils, ~~are present at the site~~ or if water conservation is needed.
- B. Performance. An applicant shall ensure that:
1. A drip irrigation system is delivered treated wastewater that meets the following criteria:
    - a. A category "A" drip irrigation system requires wastewater delivered to the system that meets the following minimum water quality criteria:
      - i. TSS of ~~40~~ 20 milligrams per liter, 30-day arithmetic mean;
      - ii. BOD<sub>5</sub> of ~~40~~ 20 milligrams per liter, 30-day arithmetic mean;
      - iii. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
      - iv. Total coliform level of ~~40 (Log<sub>10</sub> 4)~~ one colony forming units per 100 milliliters, 95th percentile;
    - b. A category "B" drip irrigation system requires wastewater delivered to the system that meets the following minimum water quality criteria:
      - i. TSS of 20 milligrams per liter, 30-day arithmetic mean, unless the manufacturer's design manual and warranty allows a greater value;
      - ii. BOD<sub>5</sub> of 20 milligrams per liter, 30-day arithmetic mean, unless the manufacturer's design manual and warrantee allows a greater value;
      - iii. Total nitrogen (as nitrogen) of 53 milligrams per liter, five-month arithmetic mean; and
      - iv. Total coliform level of ~~100 (Log<sub>10</sub> 2)~~ 300,000 colony forming units per 100 milliliters, 95th percentile; ~~(Log<sub>10</sub> 300,000 = 5.5);~~
  2. A category "A" or category "B" drip irrigation system of category "A" or category "B" shall be is designed to meet the following performance criteria:
    - a. ~~No~~ Prevention of ponding on the land surface, and
    - b. ~~Evapotranspiration of at least 50% of the emitted wastewater to the atmosphere, and~~
    - e.b. Incorporation of a fail-safe an auxiliary wastewater control mechanism or operational process to prevent inadequately treated wastewater from being discharged.
- C. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements in R18-9-A301(B), ~~and~~ R18-9-A309(B), and R18-9-E304(C), the applicant shall submit:
1. Documentation of the pretreatment method proposed to achieve the wastewater criteria specified in subsection (B)(1), such as the type of pretreatment system and the manufacturer's warranty;

2. Initial filter and drip irrigation flushing settings;
  3. ~~Calculations of the site evaporation rate~~ Site evapotranspiration calculations if used to reduce the size of the disposal works; and
  4. ~~Design calculations, showing the number of perennial plants needed to achieve the required evapotranspiration rate; and~~
  - 5.4. If supplemental irrigation water is introduced to the drip system, the volume and volume percent of an identification of the cross connection, backflow control, and supplemental water source.
- D. Design requirements. An applicant shall ensure that:
1. The design requirements of R18-9-E304(D) are followed, except that:
    - a. ~~The requirement for quick disconnects in R18-9-E304(D)(1)(c)(i) is not applicable, and~~
    - b. The applicant may provide the reserve volume specified in R18-9-E304(D)(3)(d) in an oversized treatment tank or a supplemental storage tank.
  - 4.2. Drip irrigation lines and emitters are properly placed.
    - a. Category "A" drip system. The applicant shall ensure that:
      - i. ~~Unless the manufacturer specifies deeper placement, lines and emitters are placed from six to 12 inches below the surface of the native soil~~ Lines and emitters are placed to prevent ponding on the land surface; and
      - ii. ~~Soil is replaced over the top of the drip system components. Cover material and placement depth follows manufacturer's requirements to prevent physical damage or ultraviolet degradation;~~
    - b. Category "B" drip system. The applicant shall ensure that:
      - i. ~~Unless the manufacturer specifies otherwise, lines~~ Lines and emitters are placed more than six at least 6 inches below the surface of the native soil; and
      - ii. ~~A cover of soil or engineered fill is placed on the surface of the native soil to achieve a total emitter burial depth of at least 12 inches~~ No fill is used to achieve the required cover; and
      - iii. The drip system is not used for irrigating food crops;
  - 2.3. Wastewater is filtered to remove particles 100 microns in size and larger upstream of the emitters;
  3. ~~Applicable requirements under R18-9-E304 for pressure distribution systems are followed.~~
  4. A pressure regulator assures is working properly so that excessive operating pressure or surges do not damage is provided to limit the pressure of wastewater in the drip irrigation system;
  5. Wastewater distribution pipe is Schedule 40 PVC or better, sized for a flow velocity during flushing of at least two feet per second meets the approved pressure rating pipe according to the requirements in 4 A.A.C. 48; in "Standard Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120," (D1785-99), or "Standard Specification for Chlorinated Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40 and 80," (F441/F441M-99), published by the American Society for Testing and Materials. This information is incorporated by reference and does not include any later amendments or editions of the incorporated material. Copies of the incorporated material are available for inspection at the Arizona Department of Environmental Quality, 1110 W. Washington, Phoenix, AZ 85007 or may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, Conshohocken, PA 19428-2959;
  6. The system is designed to flush the irrigation components with wastewater at a minimum velocity of 2 feet per second. The applicant shall ensure that piping and valves allow the wastewater to be pumped in a line flushing mode of operation with discharge returned to the treatment system headworks;
  7. Air vacuum release valves are installed to prevent water and soil drawback into the emitter emitters;
  8. Drip lines. Emitters are spaced no more than two feet apart. The applicant shall ensure that:
    - a. Drip lines are placed from 12 to 24 inches apart unless variations in spacing allow preservation of existing trees and shrubs or enhance performance to overcome site limitations;
    - b. Drip line installation and design requirements, including the allowable deflection, follow manufacturer's requirements;
    - c. The maximum length of a single line follows manufacturer's specifications to provide even distribution;
    - d. The drip system incorporates a herbicide to prevent root intrusion for at least 10 years.;
    - e. The drip system incorporates a bactericide to reduce bacterial slime buildup;
    - f. Disinfection does not reduce the life of the bactericide or herbicide in the drip system; and

- g. Any return flow from a drip irrigation distribution system to the treatment works does not impair the treatment performance;
9. Emitters.
- a. Emitters are spaced no more than 2 feet apart; and
- b. Emitters shall be are designed to discharge from 0.5 to 1.5 gallons per hour;
- ~~9-10.~~ A suitable backflow prevention system is installed if supplemental water for irrigation is introduced to the pumping system. The applicant shall not introduce supplemental water to the treatment system;
- ~~10.~~ Plants are selected with regard to the ability of each species to maintain evapotranspiration rates and absorb nutrients;
11. Drip irrigation is used in soils graded as:
- a. Sandy clay loam, clay loam, silty clay loam, or finer with weak platy structure or in soil with a percolation rate from 45 to 120 minutes per inch; and
- b. Sandy clay loam, clay loam, silty clay loam, or silt loam with massive structure or in soil with a percolation rate from 31 to 120 minutes per inch;
12. The minimum vertical separation distances are 1/2 of those specified in R18-9-A312(E)(2) if the design evapotranspiration rate during the wettest 30-day period is 50% percent or more of design flow, except that the applicant shall not use a minimum vertical separation distance ~~shall not be~~ less than ~~one~~ 1 foot;
13. In areas where freezing occurs, the irrigation system is protected as recommended by the manufacturer.
- E. Installation requirements. An applicant shall ensure that:
1. The irrigation pipe is installed by:
- a. ~~a~~ A plow mechanism that cuts a furrow, dispenses pipe, and covers the irrigation pipe in one operation;
- b. ~~or a~~ A trencher and hand tools that dig digs a trench not more than four 4 inches wide or less;
- c. Hand tools that dig a trench that minimize trench width and disruption to the native soil; or
- d. Without trenching, removing surface vegetation, scarifying the soil parallel with the contours, placing the pipe grid, and covering with fill material;
2. Drip irrigation pipe has an incorporated herbicide to prevent root intrusion for at least 10 years and an incorporated bactericide to reduce bacterial slime build-up. The applicant shall store drip Drip irrigation pipe is stored to preserve the herbicidal and bactericidal characteristics of the pipe;
3. Pipe deflection conforms to the manufacture's requirements and installation is completed without kinking to prevent flow restriction; and
4. The pressure piping and electrical equipment is installed according to the Construction Authorization under R18-9-A301(D)(1)(c) and any applicable codes.
- F. Operation and maintenance requirements. In addition to the applicable requirements in R18-9-A313 and R18-9-E304(G), the permittee shall:
1. ~~test~~ Test the fail-safe wastewater control mechanism or operational process quarterly to prevent discharge of inadequately treated wastewater, and
2. Maintain the herbicidal and bacteriological capability of the drip irrigation system.

**R18-9-E323. 4.23 General Permit: 3000 to less than 24,000 Gallons Per Day Design Flow**

- A. A 4.23 General Permit allows an on-site wastewater treatment facilities facility with a design flow from 3000 gallons per day to less than 24,000 gallons per day or more than one on-site wastewater treatment facility on a property or on adjacent properties under common ownership with an accumulative design flow from 3000 to less than 24,000 gallons per day if all of the following apply:
1. Except as specified in subsection (A)(3), the treatment and disposal works consists of technologies or designs that are covered under other general permits, but are sized larger to accommodate increased flows;
2. The on-site wastewater treatment facility complies with all applicable requirements of Articles 1, 2, and 3 of this Chapter;
3. The facility is not a system or a technology covered by one of the following general permits available for a design flow of less than 3000 gallons per day:
- a. An aerobic system with subsurface or surface disposal, described in R18-9-E315;
- b. ~~An aerobic system with surface disposal, described in R18-9-E316;~~
- e.b. A disinfection device, described in R18-9-E320;

- ~~d.c.~~ A sequencing batch reactor, described in R18-9-E321; or
- ~~e.d.~~ A seepage pit or pits, described in R18-9-E302; and
- 4. The discharge of total nitrogen to groundwater is controlled.
  - a. An applicant shall:
    - i. Demonstrate that the nitrogen loading calculated over the area served by the on-site wastewater treatment facility, including streets, common areas, and other non-contributing areas, is not more than 0.088 pounds (39.9 grams) of total nitrogen per day per acre calculated at a horizontal plane immediately beneath the zone active disposal field treatment; or
    - ii. Justify a nitrogen loading that is equally protective of aquifer water quality than the nitrogen loading specified in subsection (A)(4)(a)(i).
  - b. For purposes of the demonstration in subsection (A)(4)(a)(i), the applicant may assume that 0.0333 pounds (15.0 grams) of total nitrogen per day per person is contributed to raw sewage.
- B. Notice of Intent to Discharge. In addition to the Notice of Intent to Discharge requirements specified in R18-9-A301(B), an applicant shall submit:
  - 1. A performance assurance plan consisting of tasks, schedules, and estimated annual costs for operating, maintaining, and monitoring performance over a 20-year ~~useful service~~ operational life;
  - 2. Design documents and the performance assurance plan, signed, dated, and sealed by an Arizona-registered professional engineer;
  - 3. Any documentation submitted under the alternative design procedure in R18-9-A312(G) that pertains to achievement of better performance levels than those specified in the general permit for the corresponding facility with a design flow of less than 3000 gallons per day, or for any other alternative design, construction, or operational change proposed by the applicant; and
  - 4. A demonstration of total nitrogen discharge control specified in subsection (A)(4).
- C. ~~Additional Verification of General Permit Conformance~~ Discharge Authorization requirements. In addition to any other requirements, the applicant shall submit the following information before the ~~Verification of General Permit Conformance~~ Discharge Authorization is issued.
  - 1. A signed, dated, and sealed Engineer's Certificate of Completion in a format approved by the Department affirming that:
    - a. The project was completed in compliance with the requirements of this Section and as described in the plans and specifications, or
    - b. Any changes are reflected in as-built plans submitted with the Engineer's Certificate of Completion.
  - 2. The name of a certified operator or service ~~company~~ provider that is responsible for implementing the performance assurance plan.
- D. Reporting requirement. The permittee shall annually provide the Department with:
  - 1. A form signed by the certified operator or service ~~company~~ provider that:
    - a. Provides any data or documentation required by the performance assurance plan,
    - b. Certifies compliance with the requirements of the performance assurance plan, and
    - c. Describes any additions to the system during the year that increased flows and certifies that the flow did not exceed 24,000 gallons per day during any day; and
  - 2. Any applicable fee required by 18 A.A.C. 14.
- E. Facility expansion. If an expansion of an on-site wastewater treatment facility operating under this general permit involves the installation of a separate on-site wastewater treatment facility on the property with a design flow of less than 3000 gallons per day, the applicant shall submit the applicable Notice of Intent to Discharge and fee required under 18 A.A.C. 14 for the separate on-site wastewater treatment facility.
  - 1. The applicant shall indicate in the Notice of Intent to Discharge the Department's file number and the issuance date of the Discharge Authorization previously issued by the Director under the 4.23 General Permit for the property.
  - 2. Upon satisfactory review, the Director shall reissue the Discharge Authorization for the 4.23 General Permit, with the new issuance date and updated information reflecting the expansion.
  - 3. If the expansion causes the accumulative design flow from on-site wastewater treatment facilities on the property to equal or exceed 24,000 gallons per day, the Director shall not reissue the Discharge Authorization, but shall require the applicant to submit an application for an Individual Permit addressing all proposed and operating facilities on the property.

**Table 1. Unit Daily Design Flows**

<b>Type of Facility Served Wastewater Source</b>	<b>Applicable Unit</b>	<b>Sewage Design Flow per Applicable Unit, Gallons Per Day</b>
Airport	Passenger (average daily number)	4
	Employee	15
Apartment Building	Resident (if max. number fixed)	100
1 bedroom	Apartment	200
2 bedroom	Apartment	300
3 bedroom	Apartment	400
4 bedroom	Apartment	500
Auto Wash	Facility	Per manufacturer, if consistent with this Chapter
Bar/Lounge	Seat	30
Barber Shop	Chair	35
Beauty Parlor	Chair	100
Bowling Alley (snack bar only)	Lane	75
Camp		
Day camp, no cooking facilities	Camping unit	30
Campground, overnight, flush toilets	Camping unit	75
Campground, overnight, flush toilets and shower	Camping unit	150
Campground, luxury	Person	100-150
Camp, youth, summer, or seasonal	Person	50
Church		
Without kitchen	Person (maximum attendance)	5
With kitchen	Person (maximum attendance)	7
Country Club	Resident Member	100
	Nonresident Member	10
Dance Hall	Patron	5
Dental Office	Chair	500
Dog Kennel	Animal, maximum occupancy	15
Fire Station	<u>Employee</u>	<u>45</u>
Hospital		
All flows	Bed	250
Kitchen waste only	Bed	25
Laundry waste only	Bed	40
Hotel/motel		
Without kitchen	Bed (2 person)	50
With kitchen	Bed (2 person)	60
Industrial facility		
Without showers	Employee	25
With showers	Employee	35
Cafeteria, add	Employee	5
Institutions		
Resident	Person	75
Nursing home	Person	125
Rest home	Person	125

Laundry Self service Commercial	Wash cycle Washing machine	50 Per manufacturer, if consistent with this Chapter
Office Building	Employee	20
Park ( <u>temporary use</u> )		
Picnic, with showers, flush toilets	Parking space	40
Picnic, with flush toilets only	Parking space	20
Recreational vehicle, no water or sewer connections	Vehicle space	75
Recreational vehicle, with water and sewer connections	Vehicle space	100
Mobile home/Trailer	Space	250
Residence		
Dwelling, per person (for <del>sewer</del> <u>sewage</u> collection system design only)	Person	100
Dwelling, single family	Dwelling (3 bedrooms assumed)	450
Dwelling, per bedroom if count available	Bedroom	150
Dwelling, per fixture if count available	Fixture unit	25
<del>Mobile home, family</del>	<del>Home lot</del>	<del>250</del>
<del>Mobile home, adults only</del>	<del>Home lot</del>	<del>150</del>
<del>Seasonal and summer Dwelling, seasonal or summer</del>	Resident	100
Restaurant/Cafeteria	Employee	20
With toilet, add	Customer	7
Kitchen waste, add	Meal	6
Garbage disposal, add	Meal	1
Cocktail lounge, add	Customer	2
Kitchen waste disposal service, add	Meal	2
Restroom, public	Toilet	200
School		
Staff and office	Person	20
Elementary, add	Student	15
Middle and High, add	Student	20
with gym & showers, add	Student	5
with cafeteria, add	Student	3
Boarding, total flow	Person	100
Service Station with toilets	First bay Each additional bay	1000 500
Shopping Center, no food or laundry	Square foot of retail space	0.1
Store	Employee	20
Public restroom, add	Square foot of retail space	0.1
Swimming Pool, Public	Person	10
Theater		
Indoor	Seat	5
Drive-in	Car space	10

Note: Unit flow rates published in standard texts, literature sources or relevant area or regional studies ~~shall be~~ are considered by the Department, if appropriate to the project.

#### ARTICLE 4. AGRICULTURAL GENERAL PERMITS

##### R18-9-401. Definitions



In addition to the definitions established in A.R.S. §§ 49-101 and 49-201, the following terms apply to this Article:

1. "Application of nitrogen fertilizer" means any use of a substance containing nitrogen for the commercial production of crop plants. The commercial production of crop plants includes commercial sod farms and nurseries.
2. "Crop plant needs" means the amount of water and nitrogen required to meet the physiological demands of the crop plant to achieve a defined yield.
3. "Crop plant uptake" means the amount of water and nitrogen that can be physiologically absorbed by the roots and vegetative parts of a crop plant following the application of water.

**R18-9-402. Agricultural General Permits: Nitrogen Fertilizers**

A person who engages in the application of a nitrogen fertilizer and is issued an agricultural general permit shall comply with the following agricultural best management practices:

1. Limit application of the fertilizer so that it meets projected crop plant needs;
2. Time application of the fertilizer to coincide to maximum crop plant uptake;
3. Apply the fertilizer by a method designed to deliver nitrogen to the area of maximum crop plant uptake;
4. Manage and time application of irrigation water to minimize nitrogen loss by leaching and runoff; and
5. Use tillage practices that maximize water and nitrogen uptake by crop plants.

**R18-9-403. Agricultural General Permits: Concentrated Animal Feeding Operations**

A person who engages in or operates a concentrated animal feeding operation and is issued an agricultural general permit shall comply with the following agricultural best management practices:

1. Harvest, stockpile, and dispose of animal manure from a concentrated animal feeding operation to minimize discharge of any nitrogen pollutant by leaching and runoff;
2. Control and dispose of nitrogen contaminated water resulting from an activity associated with a concentrated animal feeding operation, up to a 25-year, 24-hour storm event equivalent, to minimize the discharge of any nitrogen pollutant; ~~and~~
3. Line impoundments containing animal manure wastes from a concentrated animal feeding operation to minimize the discharge of any nitrogen pollutant, and
- ~~3.~~ 4. Close facilities in a manner that will minimize the discharge of any nitrogen pollutant.