



MOHAVE COUNTY DEVELOPMENT SERVICES

P. O. Box 7000 Kingman, Arizona 86402-7000 3250 E. Kino Ave, Kingman www.mohavecounty.us Telephone (928) 757-0903 FAX (928)757-3577

Scott Holtry,
Department Director

Sam Elters, P.E.
County Manager

Environmental Quality/Waste Disposal Division

ON-SITE WASTEWATER APPLICATION FOR OWNER/BUILDERS

BULLHEAD CITY OFFICE

1130 Hancock Road
(928) 758-0707

LAKE HAVASU CITY OFFICE

(Drop Box Only)
2001 College Drive, Suite B
(928) 757-0903

KINGMAN OFFICE

3250 E. Kino Ave.
(928) 757-0903

e-mail: kgmpermitstaff@mohavecounty.us

CONTENTS

- *Letter & Instructions to Owner-Builders*
- *Application for on-site wastewater system (Residential/Conventional)*
 - *Procedures to Obtain Discharge Authorization*
 - *Mohave County Permit Application Worksheet*
 - *Notice of Intent to Discharge*
 - *Disposal Field Design/Configuration*
 - *Site Plan*
 - *Sewer Availability Worksheet*
 - *Request for Discharge Authorization*
- *Appendix A: Sample List of Materials*
- *Appendix B: "So Now You Own A Septic System"*
- *Appendix C: Instructions for completing a site plan/Sample Site Plan*
- *Appendix D: Minimum Setback Distances*
- *Appendix E: Fixture Count Worksheet*
- *Appendix F: Site Evaluator List – approved for Mohave County*
- *Appendix G: Checklist for Inspection*



**MOHAVE COUNTY DEVELOPMENT SERVICES
DEPARTMENT
ENVIRONMENTAL QUALITY/WASTE DISPOSAL DIVISION**

BULLHEAD CITY
1130 HANCOCK ROAD
ZIP 86442
(928) 758-0707

KINGMAN
3250 E. KINO AVENUE
ZIP 86409
(928) 757-0903

**LAKE HAVASU CITY
(DROP BOX ONLY)**
2001 COLLEGE DRIVE, STE. 95
ZIP 86403
(928) 757-0903

Dear Owner/Builder:

This packet has been designed to help you through the sometimes complicated process of obtaining a permit to construct a septic system. This packet will give you step-by-step directions and appendices which will help you in this process. Please take a few moments to carefully read all of the instructions contained in this packet.

While Development Services can provide resources to help you through this process, we are unable to design the system for you. If you require further help with design of your system, you will want to contact a third party to help you in this regard.

Good luck in your endeavors!!

Sincerely,

Tim M. Walsh Jr., Director
Mohave County Development Services
E-Mail: kgmpermitstaff@mohavecounty.us

PLEASE NOTE!!!

The FIRST order of business is to have an approved site evaluator perform soils and/or percolation testing at your property. Appendix F lists the persons (site evaluators) who are approved to conduct this type of testing in Mohave County. This testing must be completed by a third party who is approved in Mohave County and cannot be performed by the owner of the property.

The application CANNOT be turned into the Development Services office without this critical report (the *Site Investigation Report*). The report that is turned into the DS office MUST BE AN ORIGINAL COPY.

Following are the components of the application with instructions to help you along:

Procedures to Obtain Discharge Authorization

- a. Read carefully for an overview of how this process will work.

Mohave County Application Worksheet

- a. Fill in numbers 1-6 and 8-11B.
- b. Question 9, Soil Absorption Rate: Refer to the *Site Investigation Report* given to you by your site evaluator (a list of qualified site evaluators are listed in Appendix F). It will be listed as "S.A.R."
- c. Question 11A, Number of Fixture Units: Refer to Appendix E, and complete the worksheet for the answer.

Notice of Intent to Discharge For A Conventional Septic Tank & Disposal Field System

- a. Fill in General Information Section
- b. Fill in Supplemental Information
 - Line item 10 (gallons per day) may be found by using Appendix E.
- c. Fill in Other Miscellaneous Required Information
- d. Sign and Date the Notice of Intent

Disposal Field Design/Configuration

- a. The required absorption area may be found by dividing your projected sewage flow (gallons per day) by your Soil Absorption Rate (SAR – found in your *Site Investigation Report* given to you by your site evaluator)
 - i. Example: $450 \text{ gpd} \div 0.6 \text{ gpd/sq. ft} = 750 \text{ sq. ft. absorption area}$
- b. Fill in A through D.
 - i. B will be the width of your distribution pipe (leach pipe) plus 2” of rock
 - ii. C will be the total depth of your aggregate. The maximum effective depth is 4 ft, depending on any limiting conditions noted by your site evaluator.
 - iii. D is the total of A through C.
- c. Fill in your trench width
- d. Fill in your total length of trench (100 ft. is the maximum a single line may be)
 - i. Find your total length of trench by dividing the total absorption area by your effective depth PLUS width of the trench.

Example:

750 sq. ft. absorption area

4 ft. effective depth (sidewall area x 2) = 8 ft.

3 ft. trench width

$750 \text{ sq. ft.} \div 8 + 3 (11) = 69 \text{ ft. length}$

Site Plan

- a. Refer to Appendix C for instructions and a sample site plan
- b. Refer to Appendix D for minimum setback requirements

Sewer Availability Worksheet

If you live in an area where sewer MAY be available, you will need to get this sheet filled out by the sewer company to verify that it IS or IS NOT available for your use.

List of Materials, Components and Equipment for constructing the on-site wastewater facility


- a. Refer to Appendix A for a sample list

Operation & Maintenance Manual

- a. Refer to Appendix B for a sample

Inspection

- a. Refer to Appendix G for an inspection checklist. This list will help you during the inspection process

<h2 style="margin: 0;">Mohave County</h2> <h3 style="margin: 0;">Permit Application Worksheet</h3> <h3 style="margin: 0;">Residential</h3>	Date _____ Project # _____ Permit # _____	
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PLOT PLANS MUST BE NO LARGER THAN 8 1/2 " X 11"

NOTE: Shaded areas are for county use only.

1. Type of Improvement: _____ 2. Applicant's name: _____ Mailing address: _____ City: _____ State: _____ Zip: _____ 2A. Contact Name: _____ PHONE: _____ Fax Number: _____ Email: _____ 3. Property Owners Name: _____ Mailing Address: _____ City: _____ State: _____ Zip: _____ Fax Number: _____ Email: _____ 4. SITE LOCATION ADDRESS: _____ <div style="display: flex; justify-content: space-around; margin-top: 5px;"> House No Street Dir Street Name: </div> 5. <u>Legal Description:</u> Assessor Parcel Number: _____ - _____ - _____ Parent Parcel: <input type="checkbox"/> Yes Subdivision Name: _____ Corner Lot: <input type="checkbox"/> Yes Unit/Tract/Block/Lot: _____ -- _____ -- _____ Township/Range/Section: _____ -- _____ -- _____ 6. Plot Plan Drawing (see instructions on plot plan form) Cont _____ Acres _____	
---	--

<p>Public Works, Flood Control Division</p> 7. Is there an existing structure? <input type="checkbox"/> YES <input type="checkbox"/> NO 7A. Previous PFI#: _____ Previous FUP#: _____	FLOOD \$ _____
---	-----------------------

<p>Environmental Quality Division</p> 8. Is this an existing system? <input type="checkbox"/> YES <input type="checkbox"/> NO 8A. Is this a Conventional Septic? <input type="checkbox"/> YES <input type="checkbox"/> NO, Alternative System? <input type="checkbox"/> YES <input type="checkbox"/> NO 9. Septic Tank Size: _____ Manufacturer: _____ 10. Septic Contractor: _____ License #: _____ Or Owner / Builder: <input type="checkbox"/> YES <input type="checkbox"/> NO 11. Water Source: _____	Number of bedrooms: _____ Number of fixture units: _____
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<p>Planning & Zoning Division</p> 12. Zoning: _____ 13. Mobile Home Information: Make: _____ Size: _____ of beds: _____ Year: _____ State #: _____ HUD #: _____ Mobile Home Installer Name: _____ License #: _____ Address: _____ Phone: _____ 14. Water Source: _____ 15. Sanitation: <input type="checkbox"/> Sewer <input type="checkbox"/> Septic [Septic Permit #: _____] 16. Contractor Information (Names & License #'s) - General Contractor: _____ License #: _____ - Electrical Contractor: _____ License #: _____ - Plumbing Contractor: _____ License #: _____ - Mechanical Contractor: _____ License #: _____ 17. GRADING PERMIT: Material amount (cubic yards)? _____ 18. Bond Exemption: _____	ZONING \$ _____ BLDG \$ _____ P/C \$ _____ AUTOMATION FEE \$ _____ OTHER \$ _____ SUB-TOTAL \$ _____ TOTAL \$ _____ BAL DUE \$ _____
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Timothy M. Walsh, Jr., P.E.
Department Director

**NOTICE OF INTENT TO DISCHARGE FOR A
CONVENTIONAL SEPTIC TANK AND DISPOSAL FIELD
SYSTEM
(Type 4.02 General Aquifer Protection Permit)**

Sam Elters, P.E.
County Manager

INSTRUCTIONS

Please fill out and submit this Notice of Intent to Discharge (NOI) to obtain authorization to construct and operate a septic tank and disposal field under a Type 4.02 General Aquifer Protection Permit in accordance with Arizona Administrative Code (A.A.C.) R18-9-E302.

GENERAL APPLICATION PROCESS

1. Submit this NOI and appropriate supplemental information and forms, which are identified in this form. Please submit this application to the appropriate district office listed below:

Bullhead City District
1130 Hancock Rd.
Bullhead City, AZ 86442
(928) 758-0707

Kingman District
3250 E. Kino Ave.
Kingman, AZ 86409
(928) 757-0901

Lake Havasu City District
2001 College Ave, Suite 95
Lake Havasu City, AZ 86403
(928) 453-0712

2. Review fees established by the Mohave County Board of Supervisors. The fee is at time of application. Each Request for "Approval of Alternative Feature of Technology, Design, Setback, Installation, or Operation" submitted with this NOI is subject to an additional fee. Each resubmittal, additional inspection and/or consultation is subject to an additional fee. If a system is installed before the "Construction Authorization" is given, an additional fee will be assessed along with possible legal action.
3. Satisfy any deficiency requests arising from the Department's pre-construction review of the submitted information.
4. Receive a "Construction Authorization" from the Department authorizing construction of the onsite wastewater system.
5. Construct the onsite wastewater system within two years.
6. Upon completion of construction, submit a Request for Discharge Authorization and any required information to the Department to initiate the Department's post-construction review and inspection. If the applicant has not completed the entire project as stated in the "Construction Authorization" and is submitting a Request for Discharge Authorization for the portion completed, the applicant will need to resubmit a NOI for the remaining portion of the project.
7. Satisfy any deficiency request arising from the Department's post-construction review of the facility.
8. Receive a "Discharge Authorization" from the Department, which authorizes operation of the septic tank and disposal field in accordance with the terms of the Type 4.02 General Aquifer Protection Permit and applicable requirements of statute and rule.

LICENSING TIME FRAMES (LTF)

Licensing Time Frames are specified by the Arizona Department of Environmental Quality in AAC R18-1-525, Table 10. They are:

License Type	Administrative Completeness Review	Substantive Review (plan review)	Overall Time Frame
Single 4.02, 4.03, 4.13, 4.14, 4.15, 4.16 General Permits	42 days	31 days	73 days
Combined Two or Three Type 4 General Permits	42 days	53 days	95 days
Combined Four or more Type 4 General Permits	42 days	94 days	136 days

Name and telephone number of a person who can answer questions or provide assistance during the application process: Your assigned inspector either in person or by phone at the offices and numbers listed above. If you are unable to receive assistance, you may contact the Environmental Quality Supervisor at the Kingman office (number listed above).

Under ARS §11-1609, you may request that the County clarify its interpretation or application of a statute, ordinance, regulation, delegation agreement or authorized substantive policy statement that affects the issuance of your permit by providing the County with a written request that states: 1. Your name and address; 2. The statute, ordinance, regulation, delegation agreement or authorized substantive policy statement that requires clarification; 3. Any facts relevant to the requested ruling; 4. Your proposed interpretation of the applicable statute, ordinance, regulation, delegation agreement or authorized substantive policy statement or part of the statute, ordinance, regulation, delegation agreement or authorized substantive policy statement that requires clarification; 5. Whether, to the best of your knowledge, the issues or related issues are being considered by the County in connection with an existing license or license application.

**NOTICE OF INTENT TO DISCHARGE FOR A
CONVENTIONAL SEPTIC TANK AND DISPOSAL
FIELD SYSTEM
(Type 4.02 General Aquifer Protection Permit)**

GENERAL INFORMATION

1 Project Name: _____

2 Owner/Operator (person responsible for overall compliance)

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ Zip _____

3 Applicant

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ Zip _____

4 Contact Person/Agent (if different from applicant)

Name _____ Phone _____

Title _____ Firm Name _____

Mailing Address _____ City _____ Zip _____

5 Installation Contractor Name and Information

Name _____ Phone _____

License Number _____ Firm Name _____

Mailing Address _____ City _____ Zip _____

6 Site Information

County _____ City _____

Location of downstream end of system proposed herein

Township _____ Range _____ Section _____,

Latitude _____ ° _____ ' _____ "N Longitude _____ ° _____ ' _____ "W

Legal Description of Property _____

7 Existing Environmental Permits

List 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 discharge (attach additional pages if necessary)

SUPPLEMENTAL INFORMATION

8 Information and Submission Requirements (Check All Completed Items – attach to application)

- Site Investigation Report (original) per A.A.C. R18-9-A309(B)(1)
- Site Plan and construction quality drawings of the system per A.A.C. R18-9-A309(B)(2) and (6)(a)
- Operation and Maintenance Manual per A.A.C. R18-9-A309(B)(6)(b), A313(B) and A309(C)(2)(c)
- List of Materials, Components and Equipment per A.A.C. R18-9-A301(B) and A309(C)(2)(b)
- Agency review fee (see instructions)

9 Project Description (Check One)

- Conventional Septic System Serving a Single-Family Residence
- Conventional Septic System Serving Other Than a Single-Family Residence

10 Septic Tank and Disposal Field Description

This on-site wastewater treatment facility consists of an conventional septic tank system and disposal field sized for a design flow of _____ gallons per day. The flow is based on number of bedrooms and/or fixture units:

Number of Bedrooms _____ Number of Fixture Units _____

Floor plan included in this application packet

The septic tank conveys wastewater to a disposal field consisting of (check one):

- Trench
 - Filled with aggregate [R18-9-101(1)], or
 - Filled with crushed, recycled concrete [R18-9-E302(C)(2)(d)]
- Bed
- Chamber Technology
- Seepage Pit

The expected date of first operation of this system is: _____

The sewage to the septic tank has the characteristics of:

- Typical household sewage, or
- Typical household sewage and _____ (list other sources and characteristics of the wastewater)

Site Investigation Information

- Percolation Test Conducted Rate: _____ mpi
- Soils Testing Conducted
- Soil Absorption Rate (assigned by Site Investigator): _____ gpd/sq. ft

11 Other Miscellaneous Required Information

Water Supply (check one):

- Public Water
- Private Well

If no public water is available, and system is located less than 50 ft. from any property line, applicant must obtain an agreement from the owners of any affected undeveloped adjacent property 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. The agreement must be recorded appropriately and the documentation must be approved by the Department.

- Letter included in this application packet
- Haul Water
Comment same as above Letter included in this application packet

Wash or drainage easement

If system is proposed within the 50 foot setback required by the Aquifer Protection Permits, a letter must be obtained from the appropriate flood plain administrator allowing a reduction of the setback.

- If applicable, letter from floodplain administrator included in this application packet

13 Certification of Compliance (To be completed by the applicant in item 3 above)

I, _____, certify that this Notice of Intent to Discharge and all attachments were prepared under my direction or authorization and all information is, to the best of my knowledge, true, accurate and complete. I also certify that the septic tank and disposal field system described in this form is or will be designed, constructed, and operated in accordance with the terms and conditions of a Type 4.02 General Aquifer Protection Permit (AAC R18-9-E302) and applicable requirements of Arizona Revised Statutes Title 49, Chapter 2, and Arizona Administrative code Title 18, Chapter 9 regarding aquifer protection permits. I am aware that there are significant penalties for submitting false information including permit revocation as well as the possibility of fine and imprisonment for knowing violations.

Signature

Date

DEPARTMENT USE ONLY		DATE STAMP
File Number		
Fee Paid for this Project		
Check Total		

ON-SITE WASTEWATER SYSTEM SITE PLAN

(for 4.02 General Permit only. 4.03-4.22 must provide construction quality drawings)

Address:	<input type="checkbox"/> North Arrow shown
Assessor Parcel:	<input type="checkbox"/> Boundaries of property shown on plan
Legal Description:	<input type="checkbox"/> Proposed/existing systems, dwellings, buildings, driveways, swimming pools, tennis courts, wells, ponds, and any paved, concrete or water feature, shown.
	<input type="checkbox"/> Slopes and cut banks greater than 15%, retaining walls and other constructed features shown
	<input type="checkbox"/> Any feature less than 200 ft. from facility and reserve area that constrains the location due to setback limitations shown
	<input type="checkbox"/> Topography shown with contour intervals, showing original and post-installation grades
Property Size (in acres):	<input type="checkbox"/> EXACT LOCATION of all soils testing and percolation sites
Engineer's Scale (max 1"=60'):	<input type="checkbox"/> Location of the treatment and disposal works, pipelines, reserve area
Permit Number:	<input type="checkbox"/> Location of any public sewer if less than 400 ft. from property line

Proper construction and installation of this system shall follow all applicable Federal, State, County and City laws. Mohave county disclaims any responsibility of the construction, installation, errors or omissions involved with this system and the sole responsibility for any of the above is with the owner or his/her contractor (s) and/or agents (s). The as-built drawing is provided for ease and convenience to locate the system in the future and not for construction purposes.

The information within the site plan submitted is true and accurate to the best of my knowledge;

Signature

Title

Date: _____

DISPOSAL FIELD DESIGN/CONFIGURATION

Shallow trench, Bed or Chamber Cross-section

PROJECTED SEWAGE FLOW: _____ g.p.d. / SOIL ABSORPTION RATE (SAR): _____

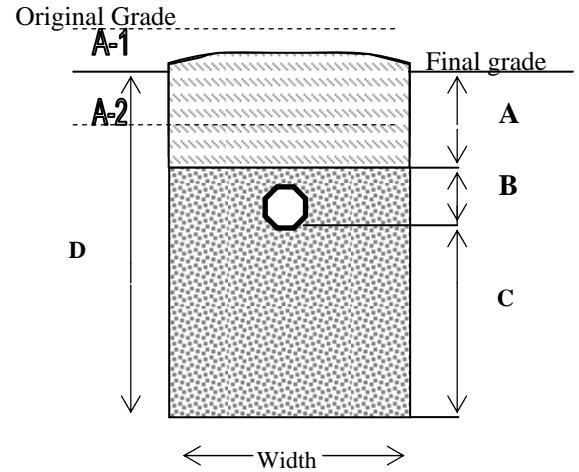
ABSORPTION AREA: _____

Shallow/Deep Trench Configuration (circle one)

Please indicate vertical depths using inches.

- A. Backfill to final grade _____
 A-1 [Graded soil area, state using a (-) sign] _____
 A-2 [Fill or topsoil, state using a (+) sign] _____
- B. Distribution pipe w/ 2" of rock _____
- C. Aggregate depth (effective depth) _____
- D. Total trench depth _____
 (**Shallow** trench is 60" or less total depth)

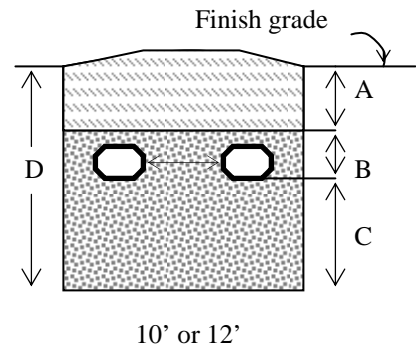
Trench width _____
 Total length of trench _____ (ft.)



Gravity Beds

- A. Backfill _____
- B. Distribution line with 2" of aggregate material _____
- C. Aggregate depth _____
- D. Total Bed depth _____
 (Gravity Bed **shall** be less than 5' total depth)

Trench width 10' or 12' (circle one)
 Distance between pipes 4' or 6' (circle one)
 Total length of Bed _____



Chamber Technology

Manufacturer _____

Model # _____

Width of the open bottom absorption surface of chamber: _____

Vertical height of the chamber side wall _____

Length of the chamber _____

Chamber Area = (1.8 x W x L) + (2 x V x L)

Number of Chambers: _____

Length of disposal field: _____



MOHAVE COUNTY DEVELOPMENT SERVICES

P. O. Box 7000 Kingman, Arizona 86402-7000 3250 E. Kino Ave, Kingman www.mohavecounty.us Telephone (928) 757-0903 FAX (928) 757-3577

SEWER AVAILABILITY INFORMATION SHEET			
Service Provider/Company Name:	Submitted by:		
	Telephone:		
	Fax:		
Date:			
Name of Property Owner:			
Location Address:			
Subdivision:	Tract:	Block:	Lot:
Assessor Parcel Number:			
Indicate below what type of project will be constructed on the above mentioned property:			
Residential (Single Family Only)			
Commercial/Multi-family	Estimate flow rate in gallons per day:		
Industrial	Estimate flow rate in gallons per day:		
Flood Zone:			
Applicant Signature:			
Per an inquiry with the above-referenced service provider regarding the availability of sanitary sewer to serve the above-referenced location, sewer is available at property:			
<input type="checkbox"/> Yes, sewer is available and will be connected to			
<input type="checkbox"/> No, sewer connection exceeds fees of R18-9-A309(A)(5)(b) (Engineers/Contractor's Estimate req.)			
<input type="checkbox"/> N/A, no sewer service provider in area			
Distance to sewer:	feet		
Comments: _____			
Sewer Provider Representative Signature:			



MOHAVE COUNTY DEVELOPMENT SERVICES

Timothy M. Walsh, Jr., P.E.
Department Director

**REQUEST FOR DISCHARGE AUTHORIZATION
FOR AN ONSITE WASTEWATER TREATMENT FACILITY TYPE
4.02 GENERAL PERMIT**

Sam Elters, P.E.
County Manager

1. Owner's Information	
Name _____	Septic Permit #: _____
Site Address _____	Parcel #: _____
Mailing Address _____	City _____ Zip _____
2. Applicant	
Name _____	Phone _____
Title _____	Firm Name _____
Mailing Address _____	City _____ Zip _____
3. Contact Person/Agent (if different from applicant)	
Name _____	Phone _____
Title _____	Firm Name _____
Mailing Address _____	City _____ Zip _____
4. Conformance with Information Submitted in Notice of Intent to Discharge (Check One)	
<input type="checkbox"/> Original site plan submitted with Notice of Intent to Discharge accurately reflects final location and configuration of components.	
<input type="checkbox"/> A revised site plan is attached showing final location and configuration of components.	
NOTE: A MINOR change made during construction in location, configuration, dimension, depth, material, or installation procedure is allowed under A.A.C. R18-9-A30.D.1.e only if the change continues to conform with the specific standard in rule used as the basis of design. Any such changes must be recorded on the site plan. Any MAJOR changes will result in an additional plan review and fee.	
<i>*Final inspection will not be performed until the above is submitted (if revised plan is needed)*</i>	
5. Septic Tank Water Tightness	
Tank manufacturer _____	Model Name/Number _____
Certificate of Conformance with Septic Tank Manufacturing Requirements supplied per R18-9-A314? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Septic Tank Capacity _____	Watertightness test passed [R18-9-A309.C.1] & Attachment 1 completed? <input type="checkbox"/> Yes <input type="checkbox"/> No
6. Map to Property	
A) Map to property is attached <input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Notices & Certification (To be completed by the applicant in item 2 above)	
By signing below, the applicant understands the following:	
1. Inspection by the DSD per R18-9-A301.D.2.a is required and is now requested for issuance of a Discharge Authorization.	
2. Should the facility not comply with requirements specified in the Aquifer Protection Permits, additional inspection and/or plan review fees may be requested prior to issuance of the Discharge Authorization.	
3. The applicant and/or an authorized on-site representative of the regulated person may accompany the inspector on the premises, except during confidential interviews	
4. The applicant has a right to any copies of original documents, a split of any samples taken during the inspection if the split of any samples will not prohibit an analysis from being conducted or render an analysis inconclusive and copies of any analysis performed on samples taken during the inspection.	
5. Any statements made during the inspection may be included in the inspection report	
6. The applicant may contact the DSD at (928) 757-0903 should any questions arise regarding the inspection	
7. The applicant is entitled to due process rights relating to an appeal of a final decision of the DSD based on the results of the inspection, and may contact the DSD at the above number for more information regarding the appeal process.	
I, _____, certify that I have read the above notices and that the information in this Request for Discharge Authorization and all attachments are, to the best of my knowledge, true, accurate and complete. I also certify that the wastewater treatment facility conforms to the design approved under the Construction Authorization for this facility in accordance with the Type 4 General Aquifer Protection Permit (R18-9-E302 to R18-9-E323), and applicable requirements of Arizona Revised Statutes Title 49, Chapter 2, and Arizona Administrative Code Title 18, Chapter 9 regarding aquifer protection permits. I am aware there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.	
Signature <input type="checkbox"/> Applicant <input type="checkbox"/> Applicant's Representative _____	Date _____
DEPARTMENT USE ONLY	
Constructed within 2 years <input type="checkbox"/> Yes <input type="checkbox"/> No	DATE STAMP

ATTACHMENT 1 - CERTIFICATE OF WATER TIGHTNESS OF AN INSTALLED SEPTIC TANK DETERMINED BY FIELD WATER TIGHTNESS TESTING UNDER ARIZONA ADMINISTRATIVE CODE R18-9-A309(C)(1)

1 Project Information

- A) Applicant Name _____
- B) Project Name _____
- C) Septic Permit # _____ Parcel #: _____

2 Water tightness Tester

- A) Name _____
- B) Company _____
- C) Address _____

3 Septic Tank Information

- A) Manufacturer _____
- B) Brand/Model _____
- C) Design Liquid Capacity _____

4 Water tightness Test Information

Description	Date	Time
1. Start presoak with clean water		
2. Start water tightness test		
3. End water tightness test		

- Passed water tightness test without repair (no water drop over 1-hour period per A.A.C. R18-9-A314(5)(d)(ii))
- Passed water tightness test following repair

5 Certification

I have tested the installed septic tank for the above-named project in accordance with the water tightness testing requirements specified in Arizona Administrative Code R18-9-A314(5)(d) and certify that the septic tank passed the water tightness test.

Signature of Tester

Date

APPENDIX A



Example Design for a Conventional Septic Tank Disposal Field and Draft List of Materials, Components, and Equipment

System Design Inputs

1. Proposed system is for a 3-bedroom home.
2. Fixture count in house is 25.
3. Percolation tests per Arizona Administrative Code R18-9-A310(F) show that the soil percolation rate is 25.0 min/in.
4. No surface or subsurface limiting conditions are identified at the site.
5. Inlet to septic tank will be 15 ft from building drain.

Disposal Trench Design Based on Inputs

1. Design flow is 600 gal/day based on table at R18-9-A314(4)(a)(i). *[450 gal/day for a 3-bedroom house plus another 150 gal/day for fixture count more than 21]*
2. Design liquid capacity of septic tank is 1250 gallons based on same table.
3. SAR is 0.40 gal/day/ft², using the table at R18-9-A312(D)(2) based on the tested percolation rate of 25.0 min/in.
4. Trench is designed to be 2 ft wide, with 4 ft of sidewalls below disposal pipe.
5. Based on selected trench configuration, the trench absorption area is 10 square feet per linear foot of trench. *[(4 ft + 2 ft + 4 ft) x 1 ft in length]*
6. Wastewater loading in trench is 4.0 gal/day per linear foot *[10 ft²/linear ft x 0.40 gal/day/ft²]*
7. Trench length, therefore, is 150 linear feet. *[600 gal/day ÷ 4 gal/day/linear ft]*
8. Decision is made to construct two parallel 75' trenches served by distribution box. Distribution box is located 5 ft from septic tank and each trench will be constructed after a 10 ft run of pipe from distribution box.
9. Total volume of aggregate in the disposal field is 50.00 cubic yards.
 - a. 44.44 yd³ beneath disposal pipe
[4 ft x 2 ft x 150 ft ÷ 27 ft³/yd³ = 44.44 yd³]
 - b. 5.56 yd³ around and above disposal pipe
[(4 in of pipe height + 2 in above pipe = 0.5 ft) x 2ft x 150 ft ÷ 27 ft³/yd³ = 5.56 yd³]
10. Total volume of pea gravel bedding below septic tank is 1.5 yd³ based on typical manufacturer's specification of 6 in of fill below septic tank, typical dimensions for 1250-gal septic tank of 10.25 ft x 5.25 ft, and 0.5 ft over dig of hole on each side *[((10.25 ft + 0.5 ft + 0.5 ft) x (5.25 ft + 0.5 ft + 0.5 ft) = 70.31 ft²) x 0.5 ft ÷ 27 ft³/yd³ = 1.30 yd³, say 1.5 yd³]*

Based on the above design, the following is a model list of materials for submittal with the Notice of Intent to Discharge:

List of Materials, Components, and Equipment

- | | | |
|------------|-----------------------|--|
| 1 | ea | 1250-gallon septic tank with effluent filter meeting the requirements of Arizona Administrative Code (A.A.C.) R18-9-A314. |
| 2 | ea | Riser with cover, [brand/model] or equivalent, meeting the requirements of A.A.C. R18-9-A314(1)(d). |
| 1.5 | yd³ | Pea gravel or equivalent bedding for septic tank per manufacturer's handling and installation instructions required by R18-9-A314(3)(d)(2). |
| 15 | ft | Sewer line pipe, DMV, Schedule 40, ASTM F891, and fittings.* |
| 50 | yd³ | Aggregate meeting A.A.C. R18-9-101(1). |
| 25 | feet | Distribution pipe (thin wall), PVC, 4-inch, ASTM D2729, and fittings.* [5 ft + 10 ft + 10 ft] |
| 150 | feet | Disposal pipe (thin wall), PVC, 4-inch, perforated, ASTM D2729, and fittings.* |
| 1 | ea | Distribution box with seals, minimum of 2 outlet holes, [brand/model] or equivalent. |
| 150 | feet | Geotextile, minimum 24-inch wide, [brand/model] or equivalent. |

*Typical pipe specifications that might be used in disposal field installations:

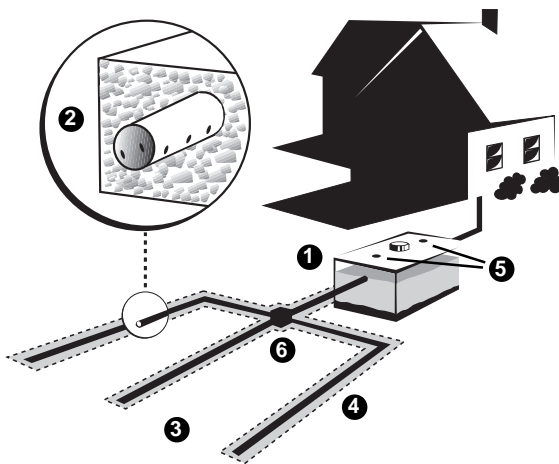
1. Normal solid PVC "thin wall" pipe
 - a. PVC distribution pipe, 3-inch, ASTM D2729
 - b. PVC distribution pipe, 4-inch, ASTM D2729
2. Perforated PVC "thin wall" pipe
 - a. PVC disposal pipe, perforated, 3-inch, ASTM D2729
 - b. PVC disposal pipe, perforated, 4-inch, ASTM D2729
3. Schedule 40 PVC DWV (drain, waste, and vent) pipe
 - a. DWV, Schedule 40, 3-inch, ASTM F891
 - b. DWV, Schedule 40, 4-inch, ASTM F891
4. Solid black ABS Schedule 40 pipe
 - a. ABS distribution pipe, Schedule 40, 3-inch, ASTM F628
 - b. ABS distribution pipe, Schedule 40, 4-inch, ASTM F628
5. SDR-35 "high strength" pipe
 - a. SDR-35 distribution pipe, 3-inch, ASTM D3034
 - b. SDR-35 distribution pipe, 4-inch, ASTM D3034

So . . . now you own a septic system

More than 25 million homes, encompassing almost 25 percent of the U.S. population, dispose of domestic wastewater through onsite (unsewered) systems. According to the American Housing Survey for the United States, in 1993 1.5 (million) out of every 4 (million) new owner-occupied home starts relied upon a form of onsite sewage disposal.

One of the major differences between owning an unsewered versus a sewer home is that unsewered wastewater treatment and disposal systems must be maintained by the homeowner. Treatment and disposal of wastewater should be one of the primary concerns of any homeowner in an unsewered area.

The most common way to treat and dispose of wastewater in rural homes is through the use of an onsite disposal system. The majority of onsite disposal systems in the United States are septic systems.



- 1 septic tank
- 2 4" perforated pipe
- 3 absorption field
- 4 crushed rock or gravel lined trench
- 5 inspection ports
- 6 distribution box

Typical Septic System Fig. 1

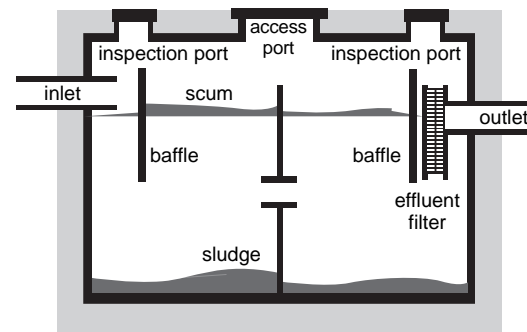
HOW IT WORKS

A typical septic system contains two major components: a septic tank and the absorption field (see Figure 1). Often, a distribution box is included as part of the system to separate the septic tank effluent evenly into a network of distribution lines that make up the absorption field. The septic tank is usually made of concrete, fiberglass, or plastic, is typically buried and should be watertight. All septic tanks have baffles (or tees) at the inlet and outlet to insure proper flow patterns (see Figure 2). Most septic tanks are single compartment; however, a number of states require two-compartment tanks or two single compartment tanks in series.

While typically designed to hold a minimum of 750–1000 gallons of sewage, the size of the tank may vary depending upon the number of bedrooms in the home and state and local regulatory requirements. The primary purpose of the septic tank is to separate the solids from the liquids and to promote partial breakdown of contaminants by microorganisms naturally present in the wastewater. The solids, known as sludge, collect on the bottom of the tank, while the scum floats on the top of the liquid. The sludge and scum remain in the tank and should be pumped out periodically (see Figure 2).

Solids that are allowed to pass from the septic tank may clog the absorption field. Keeping solids out of the absorption field not only prevents clogging, but also reduces potentially expensive repair or replacement costs and helps ensure the ability of the soil to effectively treat the septic tank effluent. Therefore, an additional safeguard in keeping solids out of the absorption field is the use of effluent filters on the outlet of the septic tank (see Figure 2).

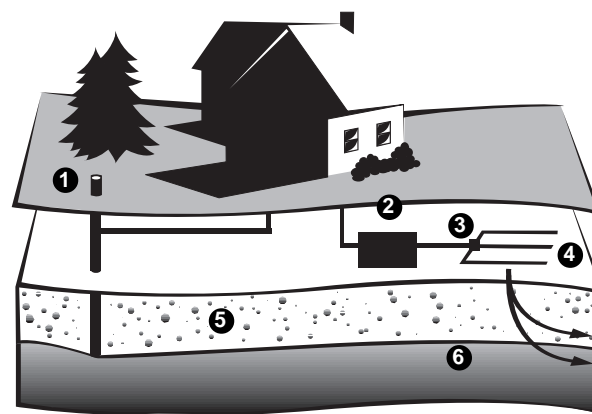
The wastewater (effluent) coming out of the septic tank may contain many potentially disease-causing microorganisms and pollutants (i.e., nitrates, phosphates, chlorides). The effluent is passed on to the absorption field through a connecting pipe or distribution box. The absorption field is also known as the soil drainfield, the disposal field, or the leachfield. The absorption field contains a series of underground perforated pipes, as indicated in Figure 1, that are



Cross-section of a two-compartment septic tank Fig. 2

sometimes connected in a closed loop system, as illustrated on the front cover, or some other proprietary distribution system

The effluent is distributed through the perforated pipes, exits through the holes in the pipes, and trickles through the rock or gravel where it is stored until absorbed by the soil. The absorption field, which is located in the unsaturated zone of the soil, treats the wastewater through physical, chemical, and biological processes. The soil also acts as a natural buffer to filter out many of the harmful bacteria, viruses, and excessive nutrients, effectively treating the wastewater as it passes through the unsaturated zone before it reaches the groundwater (see Figure 3).



- 1 drinking water well
- 2 septic tank
- 3 distribution box
- 4 absorption field
- 5 soil absorption (unsaturated zone)
- 6 groundwater (saturated zone)

Wastewater treatment and disposal in soil Fig. 3

Wastewater contains nutrients, such as nitrates and phosphates, that in excessive amounts may pollute nearby waterways and groundwater supplies. Excessive nutrients in drinking water supplies can be harmful to human health and can degrade lakes and streams by enhancing weed growth and algal blooms. However, the soil can retain many of these nutrients, which are eventually taken up by nearby vegetation.

What to Put In, What to Keep Out

- Direct all wastewater from your home into the septic tank. This includes all sink, bath, shower, toilet, washing machine and dishwasher wastewaters. Any of these waters can contain disease-causing microorganisms or environmental pollutants.
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the absorption field. Flooding of the absorption field with excessive water will keep the soil from naturally cleansing the wastewater, which can lead to groundwater and/or nearby surface water pollution.
- Conserve water to avoid overloading the septic system. Be sure to repair any leaky faucets or toilets. Use low-flow fixtures.
- Do not use caustic drain openers for a clogged drain. Instead, use boiling water or a drain snake to open clogs.
- Do not use septic tank additives, commercial septic tank cleansers, yeast, sugar, etc. These products are not necessary and some may be harmful to your system.
- Use commercial bathroom cleaners and laundry detergents in moderation. Many people prefer to clean their toilets, sinks, showers, and tubs with a mild detergent or baking soda.

continued . . .

- Check with your local regulatory agency if you have a garbage disposal unit to make sure that your septic system can accommodate this additional waste.
- Check with your local regulatory agency before allowing water softener backwash to enter your septic tank.
- Your septic system is not a trash can. Do not put grease, disposable diapers, sanitary napkins, tampons, condoms, paper towels, plastics, cat litter, latex paint, pesticides, or other hazardous chemicals into your system.
- Keep records of repairs, pumpings, inspections, permits issued, and other system maintenance activities.
- Learn the location of your septic system. Keep a sketch of it handy with your maintenance record for service visits.
- Have your septic system inspected every 1–2 years and pumped periodically (usually every 3–5 years) by a licensed inspector/contractor.
- Plant only grass over and near your septic system. Roots from nearby trees or shrubs may clog and damage the absorption field.
- Do not drive or park over any part of your septic system. This can compact the soil and crush your system.

In summary, understanding how your septic system works and adhering to these few simple rules will ensure that your septic system is a safe and economical method for treating and disposing of your wastewater onsite.



For more information regarding the care of your septic system, contact your local health department.

More information about septic systems is available from the National Small Flows Clearinghouse (NSFC) through other brochures in this series:

Groundwater protection and your septic system,
Item #**WWBRPE21**

The care and feeding of your septic system,
Item #**WWBRPE18**

For more information about this or other NSFC products, please contact us by writing to:

National Small Flows Clearinghouse
West Virginia University
P.O. Box 6064

Morgantown, WV 26506-6064

or phone:

(800) 624-8301, (304) 293-4191

or fax: (304) 293-3161

www.nsfrc.wvu.edu

So . . . now you own a septic system

One in a series of three brochures designed to aid you in caring for your septic system.



Helping America's small communities meet their wastewater needs



Helping America's small communities meet their wastewater needs

APPENDIX C

INFORMATION NEEDED ON ON-SITE WASTEWATER PLAN

(Please refer to example)

1. Property lines – include all distances and exact angles
2. Show scale on plan (e.g. 1"=20')
3. Show percolation test /soil evaluation locations – system must be installed in area of site evaluation.
4. Indicate “North” with an arrow
5. Streets adjacent to your property. Indicate your complete address as well as the legal description.
6. Structures (existing and proposed) including, but not limited to, mobiles, site built homes, garages, awnings, porches, decks, pools, entryways, barns, sheds, fences and retaining walls.
7. Indicate distances from the on-site system to any:
 - a. slopes
 - b. structures
 - c. property lines
 - d. easements
 - e. wells
 - f. rivers
 - g. reservoirs
 - h. water mains and domestic water lines
 - i. driveways
 - j. swimming pools
8. Maintain all setbacks as required by Aquifer Protection Permit R-18-9-A312(C). A list is available at the DS counter.
9. Show location of septic tank, distribution box (if applicable), leach lines and 100% reserve area.
 - a. Give exact length, width and effective depth of leach field.
 - b. If using more than one line, even distribution must be obtained through installation of a distribution box.
 - c. 90° Angles in the leach field are not permitted.
 - d. Flow must be through the head of the leach field to ensure even distribution.
10. Size the system correctly. Use the appropriate Soil Absorption Rate [SAR- provided to you by your site evaluator or you may find it in the Aquifer Protection Permit R18-9-A312 (D)].

DEFICIENCIES DURING REVIEW

Should there be any deficiencies found during the review process, the Development Services Department (DS) will immediately deny application and contact the applicant via letter or fax stating the reasons for denial. A resubmittal fee will apply to all denied applications.

DESIGN OF SYSTEM

The Development Services (DS) Staff cannot design on-site wastewater systems. Should you need help with design, refer to the Aquifer Protection Permits or contact a designer. The Development Services Staff will review applications, and issue Construction Authorizations and Discharge Authorizations only.

MODIFICATIONS TO SYSTEM

Should the DS Staff inspect a system that was installed contrary to what was approved on the application without notification, a red tag will be issued and a fee will be paid by the applicant for changes. This fee will include the review of modifications made to the system and one final inspection and will be payable before a yellow tag is issued.

SYSTEMS INSTALLED PRIOR TO APPLICATION APPROVAL

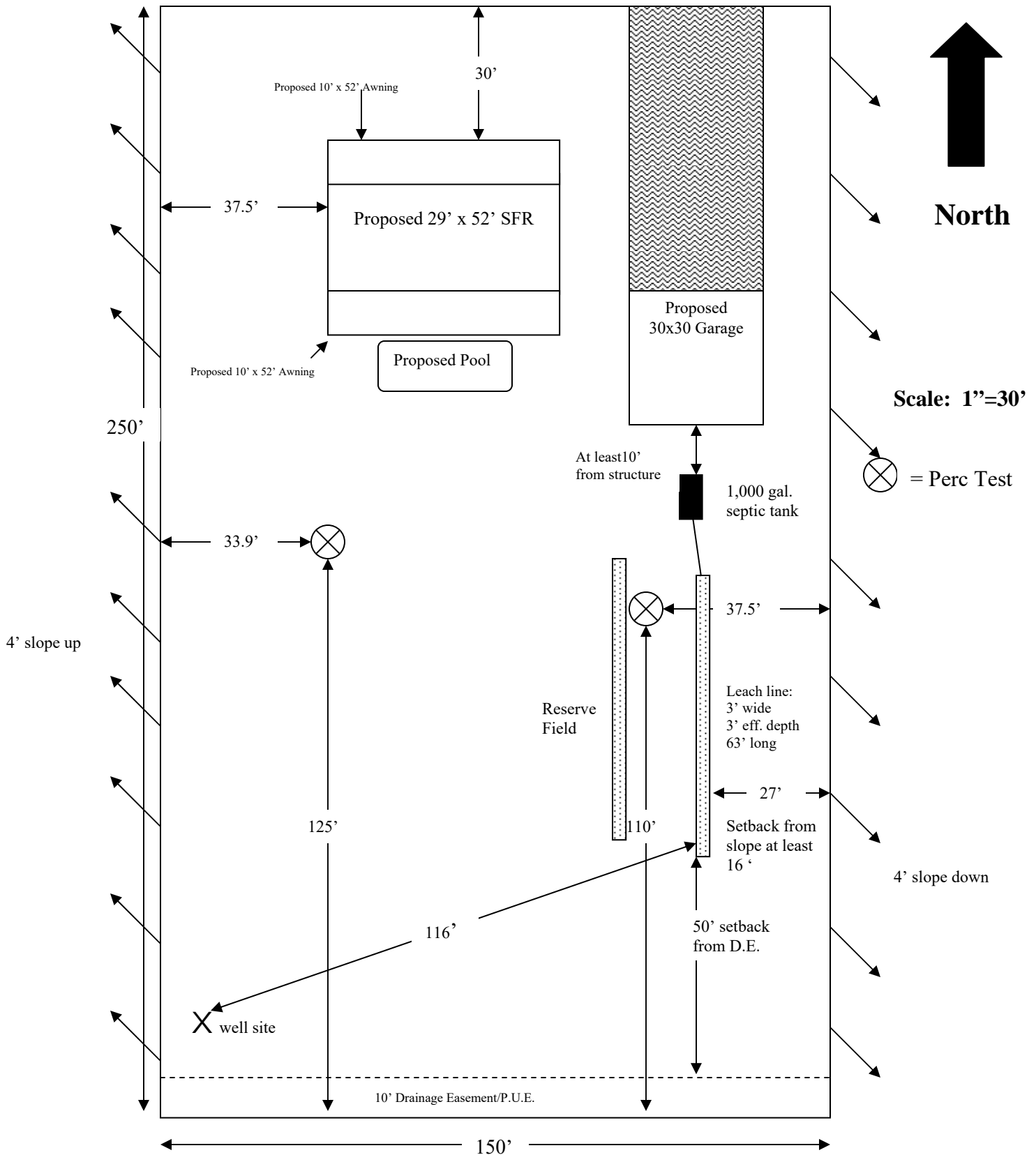
Should the DS Staff discover an on-site system that was installed before a Construction Authorization was issued (application approved), the system will be red-tagged and a fee will apply in addition to the application/permit fee.

CONSTRUCTION INSPECTION DEFICIENCIES

If the DS staff are called for an inspection and the system is, in any way, installed incorrectly, a fee will be charged for each additional inspection required. The fee will be payable prior to the additional inspection.

APPENDIX C Mohave County On-Site Wastewater Example Site Plan

12345 Environmental Quality Way



Legal Description:
Assessor's Parcel Number (APN): 123-45-678
Subdivision: Healthy People
Tract 1234 Lot 56 - Block A

Department of Environmental Quality – Water Pollution Control

- C. Setbacks. The following setbacks apply unless the Department:
1. Specifies alternative setbacks under Article 3, Part E of this Chapter;
 2. Approves a different setback under the procedure specified in subsection (G); or
 3. Establishes a more stringent setback on a site or area specific basis to ensure compliance with water quality standards.

Features Requiring Setbacks	Setback For An On-Site Wastewater Treatment Facility, Including Reserve Area (In Feet)	Special Provisions
1. Building	10	Includes porches, decks, and steps (covered or uncovered), breezeways, roofed patios, carports, covered walks, and similar structures and appurtenances.
2. Property line shared with any adjoining lot or parcel not served by a common drinking water system* or an existing water well	50	A person may reduce the setback to a minimum of 5 feet from the property line if: <ol style="list-style-type: none"> a. The owners of any affected undeveloped adjacent properties agree, as evidenced by an appropriately recorded 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 b. The arrangements and documentation are approved by the Department.
3. All other property lines	5	None
4. Public or private water supply well	100	None
5. Perennial or intermittent stream	100	Measured horizontally from the high water line of the peak streamflow from a 10-year, 24-hour rainfall event.
6. Lake, reservoir, or canal	100	Measured horizontally from the high water line from a 10-year, 24-hour rainfall event at the lake or reservoir.
7. Drinking water intake from a surface water source (includes an open water body, downslope spring or a well tapping streamside saturated alluvium)	200	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.
8. Wash or drainage easement with a drainage area of more than 20 acres	50	Measured horizontally from the nearest edge of the defined natural channel bank or drainage easement boundary. A person may reduce the setback to 25 feet if natural or constructed erosion protection is approved by the appropriate flood plain administrator.
9. Water main or branch water line	10	None
10. Domestic service water line	5	Measured horizontally between the water line and the wastewater pipe, except that the following are allowed: <ol style="list-style-type: none"> 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. 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.

Department of Environmental Quality – Water Pollution Control

11. Downslopes or cut banks greater than 15 percent, culverts, and ditches from:		
a. Treatment works components	10	Measured horizontally from the bottom of the treatment works component to the closest point of daylighting on the surface.
b. Trench, bed, chamber technology, or gravel less trench with:		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.
i. No limiting subsurface condition specified in R18-9-A310(D)(2),	20	
ii. A limiting subsurface condition.	50	
c. Subsurface drip lines.	3	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.
12. Driveway	5	Measured horizontally to the nearest edge of an onsite 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.
13. Swimming pool excavation	5	Except if soil loading or stability concerns indicate the need for a greater separation distance.
14. Easement (except drainage easement)	5	None
15. Earth fissures	100	None
* 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.		

FOR RESIDENTIAL USE
FIXTURE COUNT CALCULATION CHART

Use the fixture count chart below to determine the total number of fixture units in the home. **Check the corresponding box on the system design flow chart based on your fixture count or number of bedrooms whichever is greater.** The box that is checked is the row where you'll find your minimum tank size and system design flow. Enter the information at the bottom of the page, and submit this form with your application.

Residential Fixture Type	Existing # Fixtures	Proposed # Fixtures	Multiply by	Fixture Units	Equals	Total # PROPOSED Fixtures
Bathtub			X	2	=	
Bidet			X	2	=	
Dishwasher, service			X	2	=	
Clothes washer			X	2	=	
Utility tub or sink separate from clothes washer			X	2	=	
Sink, kitchen (with or without dishwasher)			X	2	=	
Shower, single staff			X	2	=	
Sink, bar			X	1	=	
Sink, service			X	3	=	
Lavatory, single or double			X	1	=	
*Toilet, 1.6 gallons per flush (gpf)			X	3	=	
*Toilet, 1.6 - 3.2 gpf			X	4	=	
*Toilet >3.2 gpf			X	6	=	
FIXTURE COUNT TOTAL					=	
Physical # Bedrooms					=	

*Toilets currently available in Arizona are 1.6 gallons per flush. Older fixtures may not use the same amount of gallons per flush.

SYSTEM DESIGN FLOW CHART

✓	No. of Bedrooms	Fixture Count	Minimum Tank Size (gallons)	System Design Flow (gpd)
<input type="checkbox"/>	1	7 or less	1000	150
<input type="checkbox"/>		More than 7 less than 14	1000	300
<input type="checkbox"/>	2	14 or less	1000	300
<input type="checkbox"/>		More than 14 less than 21	1000	450
<input type="checkbox"/>	3	21 or less	1000	450
<input type="checkbox"/>		More than 21 less than 28	1250	600
<input type="checkbox"/>	4	28 or less	1250	600
<input type="checkbox"/>		More than 28 less than 35	1500	750
<input type="checkbox"/>	5	35 or less	1500	750
<input type="checkbox"/>		More than 35 less than 42	2000	900
<input type="checkbox"/>	6	42 or less	2000	900
<input type="checkbox"/>		More than 42 less than 49	2500	1050
<input type="checkbox"/>	7	49 or less	2500	1050
<input type="checkbox"/>		More than 49 less than 56	3000	1200
<input type="checkbox"/>	8	56 or less	3000	1200
<input type="checkbox"/>		More than 56	3000	1350

NOTE: For a single residence with more than 8 bedrooms, use R18-9-A314 (D) (2) as the basis for determining minimum septic tank size and system design flow.

APPENDIX G

CHECKLIST: **INSPECTION OF YOUR ON-SITE WASTEWATER SYSTEM**

- Discharge Authorization received (**this document, which is a request for inspection is submitted to the Development Services Department at least 24 hours prior to when the inspection is needed**).
- Water Tightness Certification received (**This test is conducted by the person installing the system prior to the inspection request**).
- System has been left uncovered for inspection
- Property Boundaries are visibly marked – four corners
- All required setbacks met, (buildings, easements, drainage easements, washes, driveways, property lines, slopes, etc.)
- Design and construction verified
- Installed tank size as per approved plan
- GPS coordinates taken at the inlet of the tank
- Inlet and Outlet T is stable and level
- Risers, if required, are in place
- Seal around inlet & outlet of septic tank checked to insure water tightness
- Effluent filter in place
- Tank is level
- Five feet of solid pipe between tank and leach field
- Leach field pipe level
- The ends of the leach lines capped and exposed for inspection
- Size of gravel is uniform. ¾” -2 ½” in diameter and clean
- Laterals connecting multiple lines are solid pipe
- If multiple lines present, even distribution is achieved & distribution box present and level
- Sufficient room available for reserve area
- Lot is vacant

What color tag to look for and what you tag indicates:

Yellow tag issued: system can be covered - Final Approval paperwork to follow.

Red tag issued: requirements are not met, contact inspector – Corrections must be made before backfilling.

Blue tag issued: all required documents have not been received - If alternative system, Engineer’s Certificate of Completion is required.