



## ENGINEERING REVIEW UNIFORM SITE INVESTIGATION REPORT FORM

### Instructions

This form is the site investigation form for on-site wastewater treatment facilities required in accordance with Arizona Administrative Code (A.A.C.) R18-9-A310. This form may also be used in conjunction with A.A.C. R18-9-A310 as guidance to assist in meeting the subdivision requirements, specifically the geological report required per R18-5-408. Alternatively, the departments engineering bulletins may be used but A.A.C. R18-9-A310 is more current. For addition guidance on the geological report, please see the Application for Sanitary facilities for Subdivision at the following link

[http://www.azdeq.gov/environ/water/engineering/download/subdivision\\_app.pdf](http://www.azdeq.gov/environ/water/engineering/download/subdivision_app.pdf). Please be advised, perc tests and soil borings are both required for on-site subdivision reviews.

An investigator that meets the qualifications of A.A.C. R18-9-A310(H) must perform the site investigation. Both the surface and subsurface characterizations must be done in conformance with A.A.C. R18-9-A310. The site investigator shall utilize this ADEQ form and the appropriate attachments. Submit the results with a Notice of Intent to Discharge application. Space is provided for an Arizona-Registered Professional Engineer, Geologist or Sanitarian to seal their work products.

**Site Investigation Report, Item 1:** The authorization for site investigation shall be completed by the appropriate person before the field investigation begins.

**Site Investigation Report, Items 2 – 10:** To be completed by the qualified investigator.

**Site Investigation Report Attachments 1, 2, 3, and 4:** The qualified investigator shall complete all necessary attachments. Attach only those with required information. Identify the attachments submitted on item 9 of the Site Investigation Report (page 3). The investigator shall use the appropriate continuation page for any attachment requiring more than 1 page. Add the page number in the blank spaces at the bottom of each continuation page used. Include the page totals in the Item 9 of the report form. Please use the soil codes (on the next page) for ASTM Method 5921 in Attachment 1.

**NOTE:** BEFORE COMPLETING THIS FORM, DOWNLOAD THE LATEST VERSION FROM THE LINK PROVIDED AT THE BOTTOM OF THE PAGE.

Uniform Site Investigation Report Form (A.A.C. R18-9-A310) for State of Arizona

TEXTURE		STRUCTURE																													
Loamy Sand – (LS) Sandy Loam – (SL) Silt Loam – (SiL) Loam – (L) Sandy Clay Loam – (SCL) Silty Clay Loam – (SiCL) Clay Loam – (CL) Sandy Clay – (SC) Silty Clay – (SiC) Clay – (C)		<p><b>GRADE</b></p> Structureless (0) No aggregation Weak (1) Barely observable Moderate (2) Distinct peds Strong (3) Durable peds																													
<p><b>SAND SIZES</b></p> Coarse – (Co) Medium – (M) Fine – (F) Very Fine – (VF)		<p><b>SIZE</b></p> <table border="0"> <tr> <td>Very Fine (VF)</td> <td>&lt;1 mm</td> <td><b>Granular, Platy</b></td> <td><b>Angular, Subangular, Blocky</b></td> <td><b>Prismatic, Columnar</b></td> </tr> <tr> <td>Fine (F)</td> <td>1-2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Medium (M)</td> <td>2-5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Coarse (C)</td> <td>5-10</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Very Coarse (VC)</td> <td>&gt;10</td> <td></td> <td></td> <td></td> </tr> </table> <p><b>SHAPE</b></p> Platy (PL) Flat, plate-like Prismatic (PR) Taller than wide --Columnar (CPR) Rounded tops Blocky (BK) Cubical --Angular (ABK) Sharp edges --Subangular (SBK) Rounded edges Granular (GR) Spherical No Structure --Single Grain (SG) Sandy texture --Massive (M) Finer textures					Very Fine (VF)	<1 mm	<b>Granular, Platy</b>	<b>Angular, Subangular, Blocky</b>	<b>Prismatic, Columnar</b>	Fine (F)	1-2				Medium (M)	2-5				Coarse (C)	5-10				Very Coarse (VC)	>10			
Very Fine (VF)	<1 mm	<b>Granular, Platy</b>	<b>Angular, Subangular, Blocky</b>	<b>Prismatic, Columnar</b>																											
Fine (F)	1-2																														
Medium (M)	2-5																														
Coarse (C)	5-10																														
Very Coarse (VC)	>10																														
ROCK FRAGMENTS		MOTTLES	BOUNDARY	CONSISTENCY		SAR (gpd/ft <sup>2</sup> )																									
				DRY	MOIST																										
<p><b>ROUNDED, SUBROUNDED, ANGULAR, IRREGULAR</b></p> Gravel – (GR) 2-75 mm Fine – (FGR) 2-5 mm Medium – (MGR) 5-20 mm Coarse – (CGR) 20-75 mm Pebbles – (PB) 2-75 mm Fine – (FPB) 2-5 mm Medium – (MPB) 5-20 mm Coarse – (CPB) 20-75 mm Cobbles – (CB) 75-250 mm Stones – (S) 250-600 mm Boulders – (B) ≥600 mm		<p><b>TYPE OF ROCK</b></p> Basalt – (BAS) Cinders – (CIND) Sandstone – (SST) Limestone – (LST)	<p><b>QUANTITY</b></p> Few (F) - <2% Common (C) - 2-20% Many (M) - >20%	<p><b>DISTINCTNESS</b></p> Abrupt (A) – Less than 2 cm Clear (C) – 2 to 5 cm Gradual (G) – 5 to 15 cm Diffuse (D) – More than 15 cm	L = Loose S = Soft SH = Slightly Hard MH = Moderately Hard VH = Very Hard H = Hard R = Rigid VR = Very Rigid	L = Loose VFR = Very Friable FR = Friable FI = Firm VFI = Very Firm EFI = Extremely Firm SR = Slightly Rigid R = Rigid VR = Very Rigid	See Arizona Administrative Code(A.A.C.) R18-9-A312(D) for SAR value.																								
<p><b>FLAT</b></p> Channers – (CH) 2-150 mm Flagstones – (FL) 150-380 mm Stones – (ST) 380-600 mm Boulders – (BO) ≥600 mm		<p><b>TERMS OF SOIL/ROCK</b></p> Cemented – (CEM) Ice or Frozen – (ICE) Weathered – (WEA) Unweathered – (UNWEA) Fractured – (FRA) Decomposed – (DEC) Stratified – (ST)	<p><b>CONTRAST</b></p> Faint – (F) Distinct – (D) Prominent – (P)	<p><b>TOPOGRAPHY</b></p> Smooth (S) – A plane with few or no irregularities Wavy (W) – Waves wider than deep Irregular (I) – Waves deeper than wide Broken (B) – discontinuous and interrupted																											

**1 Authorization For Site Investigation**

I certify that I am (check one)  the Owner,  the Authorized Representative or  an Other Person and have authority to grant the investigator access to the property for this site investigation and authorize the work certified in this site assessment.

Name & Address  
(Printed) \_\_\_\_\_

Signature \_\_\_\_\_

**2 Project Identification**

Property Owner or Project Name \_\_\_\_\_

**3 Site Information [A.A.C. R18-9-A309(B)(2)(a)]**

Address \_\_\_\_\_ City \_\_\_\_\_

Parcel Number \_\_\_\_\_ Lot Number \_\_\_\_\_

Township \_\_\_\_\_ Range \_\_\_\_\_ Section \_\_\_\_\_

Latitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " N \_\_\_\_\_ Longitude \_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " W

**4 Investigator Information [A.A.C. R18-9-A310(H)]**

Name \_\_\_\_\_ Phone \_\_\_\_\_

Title \_\_\_\_\_ Firm Name \_\_\_\_\_

Mailing Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ E-Mail \_\_\_\_\_

**5 Surface Characterization [A.A.C. R18-9-A310(C)]**

Identify the presence or absence of all of the following possible limiting conditions in the intended location of the treatment works and the primary and reserve areas of the on-site wastewater treatment facility:

A) The surface slope is greater than 15 % at the intended location of the on-site wastewater facility  YES  No

B) Setback distances do NOT meet all the minimum values specified in R18-9-A312(C)  YES  No

**NOTE: Check YES if the location or size of the dwelling or other improvements, or the bedroom count or the fixture unit count is UNKNOWN to the site investigator.**

C) Surface drainage characteristics could adversely affect the ability of the facility to function properly  YES  No **NOTE: If YES, please describe in Attachment 4.**

D) A 100-year flood hazard zone, as indicated on the applicable flood insurance rate map, is located within the property on which the on-site wastewater treatment facility will be installed  YES  No **NOTE: If YES, please specify the FEMA Flood Insurance Map Number or Other Source** \_\_\_\_\_

E) An outcropping of rock that cannot be excavated is present and could impair the function of soil receiving the discharge  YES  No

F) Fill material deposits are present  YES  No

**If the answer is YES to any of the above potential surface limiting conditions, please show location and note the condition type on Site Investigation Map (Item 7).**

**6 Subsurface Characterization Method [A.A.C. R18-9-A310(D)]**

Check method used to perform subsurface characterization per A.A.C. R18-9-A310(D)(1) and (3)

A) ASTM D5921 used?  Yes  No **(if Yes, please enclose Attachment 1)**

B) Percolation test method used?  Yes  No **(if Yes, please enclose Attachment 2)**

C) Seepage performance test method used?  Yes  No **(if Yes, please enclose Attachment 3)**

D) Other ADEQ approved method?  Yes  No **(if Yes, please provide in Attachment 4 the method and data)**

**7 Site Investigation Map Showing the Location of Limiting Conditions and Setbacks from Features and Improvements [A.A.C. R18-9-A309(B)(2)(a)]**

**A. CHECK** below the features shown on the Site Investigation Map. **WRITE N/A** if item is **NOT PRESENT**. **RECORD** below the separation (feet) that will be maintained between the system and the checked feature.

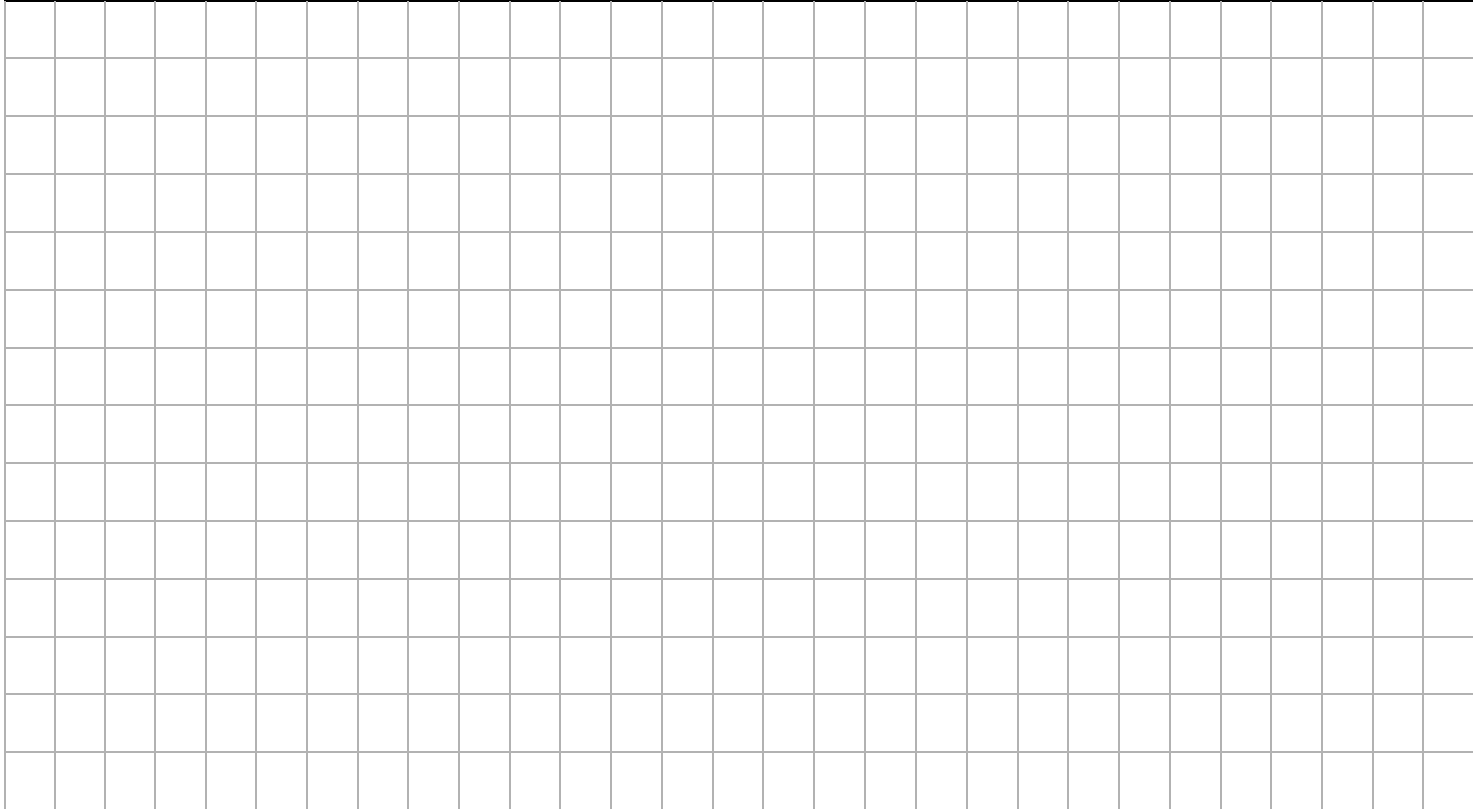
___ Water supply well ___ (ft)	___ Boundary of 100-year flood hazard zone ___ (ft)
___ Water main or branch water line ___ (ft)	___ Drainage easement or wash with drainage area more than twenty acres ___ (ft)
___ Domestic service water line ___ (ft)	___ Other Easement ___ (ft)
___ Drinking water intake from a surface water source ___ (ft)	___ Downslope cut banks and culvert or roadway ditches ___ (ft)
___ Perennial or intermittent stream ___ (ft)	___ Planned cut bank over 2 feet deep ___ (ft)
___ Lake, reservoir, or canal ___ (ft)	___ Wall or planned wall over 2 feet high ___ (ft)
___ Pond or other water feature ___ (ft)	___ Driveway or parking area ___ (ft)
___ Swimming pool ___ (ft)	___ Storage Area ___ (ft)      ___ Earth fissure ___ (ft)
___ Planned building ___ (ft)	___ Other ___ (ft) Describe: _____
___ Existing building ___ (ft)	

**B.** Minimum setback distances are within the limits specified in R18-9-A312(C);  Yes  UNKNOWN  No  
**Check UNKNOWN if the dwelling location or size (including building footprint, bedroom count & fixture unit count), or the location of other improvements is not known to the person performing the site investigation.**

**C.** Show all soil test locations. Show any condition or feature observed during the site investigation which may affect on-site system design & is located within the **SITE INVESTIGATION AREA (defined as the planned excavation boundaries for the treatment works, primary disposal area and reserve disposal area plus the surrounding area out to 100 feet)** including :

(1) Show land surface contours at appropriate intervals when the elevations across the Site Investigation Area differ by more than 5 feet, and

(2) Any other factor is observed that may affect system design **regardless of property ownership (please include the Site Investigation Map with Attachment 4 if the information cannot be depicted on the below Grid).**



**8 Subsurface Limiting Conditions [A.A.C. R18-9-A310(D)(2)]**

Identify the presence or absence of all of the following possible limiting conditions in the intended location of the primary and reserve disposal areas of the on-site wastewater treatment facility to a depth of at least 12 feet below land surface or to an impervious soil or rock layer if encountered at a shallower depth:

- A) The soil absorption rate determined under A.A.C. R18-9-A312(D)(2) is:
  - 1. More than 1.20 gallons per day per square foot?  Yes  No
  - 2. Less than 0.20 gallons per day per square foot?  Yes  No
  - 3. A **site-specific soil absorption rate (SAR)** is required per A.A.C. R18-9-A312 (D)(2)(b)?  Yes  No
- 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 A.A.C. R18-9-A312(E)(1)?  Yes  No
- C) Does seasonal saturation occur within surface soils that could affect the performance of the on-site wastewater treatment facility?  Yes  No If Yes, describe evidence: \_\_\_\_\_
- D) Do any of the following subsurface limiting conditions that may cause or contribute to surfacing of wastewater occur within 12 feet of the land surface:
  - 1. An impervious soil or rock layer?  Yes  No
  - 2. A zone of saturation that substantially limits downward percolation from the disposal works?  Yes  No
  - 3. Soil with more than 50 percent rock fragments?  Yes  No
- E) Do any of the following subsurface limiting conditions that may promote accelerated downward movement of insufficiently treated wastewater occur within 12 feet of the land surface:
  - 1. Fractures or joints in rock that are open, continuous, or interconnected?  Yes  No
  - 2. Karst voids or channels?  Yes  No
  - 3. Highly permeable materials such as deposits of cobbles or boulders?  Yes  No
- F) Does subsurface conditions exist 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?  Yes  No
- G) Depth to groundwater below land surface \_\_\_\_\_ feet as determined by  Trench or boring,  Subdivision report,  Published groundwater data or  Relevant well data.

**If the answer is Yes to any of the above subsurface limiting conditions, please show location and note the associated limiting condition type on Site Investigation Map (Item 7).**

**9 Site Investigation Attachments**

#	Attachment Description	Attached?
		<input type="checkbox"/> Yes, total of _____ pages.
		<input type="checkbox"/> Yes, total of _____ pages.
		<input type="checkbox"/> Yes, total of _____ pages.

**10 Investigator Certification**

- A)  Arizona-registered Professional engineer Certification Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_
- B)  Arizona-registered Professional geologist Certification Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_
- C)  Arizona-registered Sanitarian Registration Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_
- D)  A certificate of training from a course recognized by ADEQ

Course Name: \_\_\_\_\_ Completion Date: \_\_\_\_\_

- E)  Qualifies under another category designated in writing by ADEQ. **Please use Attachment 4 to provide approved Qualification Category & Date Approved.**

<b>Professional Seal</b>
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By signing this section, I certify that I am qualified to conduct this investigation as specified in R18-9-A310(H) and have inspected the property identified in Item 3 for purposes of performing a site investigation. I have performed this site investigation in accordance with R18-9-A310 and have completed this investigation to the best of my knowledge.

Printed Investigator Name/

**Date of Investigation:** \_\_\_\_\_

**Investigator Signature/** \_\_\_\_\_

**Date Signed**

**ATTACHMENT 1 – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION**

Facility Address: \_\_\_\_\_

Parcel Number: \_\_\_\_\_

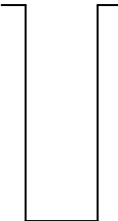
Tested by: \_\_\_\_\_

Depth to Groundwater: **PLEASE REPORT IN ITEM 8.G**

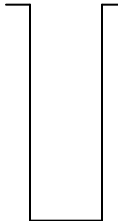
Date Test Completed: \_\_\_\_\_

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR

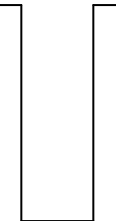
Comments:



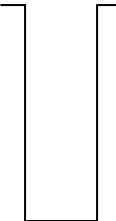
Test \_\_\_\_



Test \_\_\_\_



Test \_\_\_\_



Test \_\_\_\_

Professional Seal

**ATTACHMENT 1, CONTINUED – ASTM 5921 METHOD FOR SUBSURFACE SOIL CHARACTERIZATION**

Facility Address: \_\_\_\_\_

Parcel Number: \_\_\_\_\_


Tested by: \_\_\_\_\_

Depth to Groundwater: **PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM**

Date Test Completed: \_\_\_\_\_

Test Hole #	Depth Interval Below Land Surface (Inches)	Texture	Structure	Rock Fragments %	Mottles %	Boundary	Dry Consistency	Moist Consistency	SAR

Comments:


  
 Test \_\_\_\_                      Test \_\_\_\_                      Test \_\_\_\_                      Test \_\_\_\_

**Professional Seal**

**ATTACHMENT 2 – PERCOLATION TEST DATASHEET**

Facility Address: _____	Parcel Number: _____
Test Hole Number/Location: _____	Depth of Test Hole Bottom Below Land Surface (inches): _____
Date Test Complete: _____	Test Hole Cross-section: Please check a box and indicate size <input type="checkbox"/> Diameter _____ inches <input type="checkbox"/> Square _____ inches

Describe the land surface at the top of the Test Hole is (please check one):

Undisturbed Native Soil     Cut Surface     Fill Surface     Other (describe) \_\_\_\_\_

**SOIL DATA FROM TEST HOLE:**

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

**TEST HOLE PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

**TEST HOLE PERCOLATION TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	(T <sub>i</sub> + T <sub>i+1</sub> )/2 ΔT(min)	P <sub>i+1</sub> - P <sub>i</sub> ΔP	ΔP/ ΔT
						N/A	N/A	N/A

**Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM**

**Stabilized Percolation Rate (from Graph) \_\_\_\_\_ minutes per inch**

**PERSON WHO PERFORMED THE TEST:**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

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**ATTACHMENT 2, CONTINUED – PERCOLATION TEST DATASHEET**

Facility Address: _____	Parcel Number: _____
Test Hole Number/Location: _____	Depth of Test Hole Bottom Below Land Surface (inches): _____
Date Test Complete: _____	Test Hole Cross-section: Please check a box and indicate size <input type="checkbox"/> Diameter _____ inches <input type="checkbox"/> Square _____ inches

Describe the land surface at the top of the Test Hole is (please check one):

Undisturbed Native Soil     Cut Surface     Fill Surface     Other (describe) \_\_\_\_\_

**SOIL DATA FROM TEST HOLE:**

Depth (inches)	Soil Texture	Soil Structure	Soil Consistence	Mottles	% Rock

**TEST HOLE PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Depth (inches)

**TEST HOLE PERCOLATION TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	(T <sub>i</sub> + T <sub>i+1</sub> )/2 ΔT(min)	P <sub>i+1</sub> - P <sub>i</sub> ΔP	ΔP/ ΔT
						N/A	N/A	N/A

**Depth to groundwater (feet bls): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM**

**Stabilized Percolation Rate (from Graph) \_\_\_\_\_ minutes per inch**

**PERSON WHO PERFORMED THE TEST:**

Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_

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**ATTACHMENT 3 – SEEPAGE PIT TEST DATASHEET**

Facility Address: \_\_\_\_\_ Parcel Number: \_\_\_\_\_  
 Test Hole Number \_\_\_\_\_ Depth of Hole Bottom \_\_\_\_\_  
 /Location: \_\_\_\_\_ Below Land Surface (feet): \_\_\_\_\_  
 Date Test Complete: \_\_\_\_\_ Test Hole Diameter (inches): \_\_\_\_\_

**Depth to Groundwater below Pit Terminus (feet): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM**

**SOIL DATA FROM TEST HOLE:**

Depth (feet)	Soil Lithology

**PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Water Surface Depth Below Ground Surface (inches)

Total gallons of water added to the Test Hole for presoak \_\_\_\_\_ gallons.

**SEEPAGE PIT TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	(P <sub>i+1</sub> - P <sub>i</sub> )/P <sub>i</sub> * 100%

Stabilized Percolation Rate (from Graph): \_\_\_\_\_ minutes per inches

**PERSON WHO PERFORMED THE TEST:**

Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_

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**ATTACHMENT 3, CONTINUED – SEEPAGE PIT TEST DATASHEET**

Facility Address: \_\_\_\_\_ Parcel Number: \_\_\_\_\_  
 Test Hole Number \_\_\_\_\_ Depth of Hole Bottom \_\_\_\_\_  
 /Location: \_\_\_\_\_ Below Land Surface (feet): \_\_\_\_\_  
 Date Test Complete: \_\_\_\_\_ Test Hole Diameter (inches): \_\_\_\_\_

**Depth to Groundwater below Pit Terminus (feet): PLEASE REPORT IN ITEM 8.G ON PAGE 3 OF FORM**

**SOIL DATA FROM TEST HOLE:**

Depth (feet)	Soil Lithology

**PRESOAKING:**

Run #	Start Date (M:D:Y)	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time (min)	Initial Water Surface Depth Below Ground Surface (inches)

Total gallons of water added to the Test Hole for presoak \_\_\_\_\_ gallons.

**SEEPAGE PIT TEST:**

Run #	Start Time (H:M::S)	End Time (H:M::S)	Elapsed Time, T <sub>i</sub> (min)	Measured Water Drop (inches)	Percolation Rate, P <sub>i</sub> (min/in.)	(P <sub>i+1</sub> - P <sub>i</sub> )/P <sub>i</sub> * 100%

Stabilized Percolation Rate (from Graph): \_\_\_\_\_ minutes per inches

**PERSON WHO PERFORMED THE TEST:**

Name: \_\_\_\_\_  
 Company: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
 Email: \_\_\_\_\_

Professional Seal



