Pre-Development Site Characterization (PDSC)

Westmoreland Conservation District

Engineers Workshop

March 19, 20, 2026

PDSC…

- What does the site look like before the development takes place?
- What limitations are present?
- What Stormwater Control Measures (SCM’s) should you use?
- Where might you be able to discharge your flow?
- Helps you do a better plan
- Helps you get approval faster

Module 2 says you have to do a pre-development site characterization

3800-PM-BCW0406b Rev. 12/2025
PCSM Module 2

Pennsylvania Department of Environmental Protection

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

Discharges of Stormwater Associated with Construction Activities
Post-Construction Stormwater Management (PCSM) Module 2

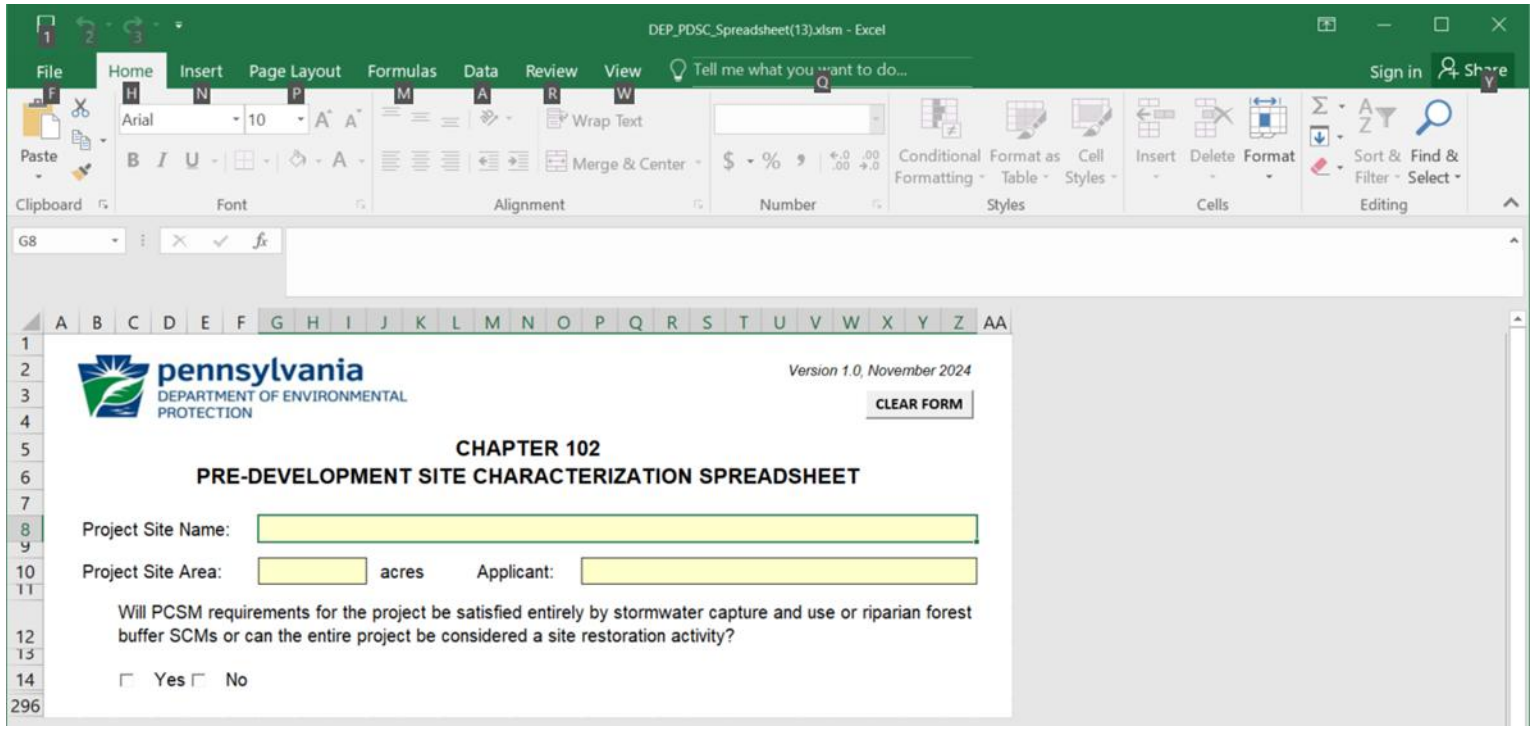
Applicant: Project Site Name:

Pre-Development Site Characterization			
1.	Was a pre-development site characterization completed for this project? ☐ Yes ☐ No If Yes, describe the activities undertaken.		
2.	No. Test Pits completed:	No. Boreholes completed:	
3.	Number of Infiltration Tests completed:	Method(s):	
4.	Project Site Area: acres	Area investigated for infiltration capabilities: acres	
5.	DEP's Pre-Development Site Characterization Spreadsheet has been completed and is attached	☐ Yes	☐ No

The PDSC spreadsheet is <u>how</u> you do a pre-development site characterization

Completing the PDSC spreadsheet…

- Is a requirement of Module 2 for most projects
- Will help you as you move into the design and permitting process
- Will help the Department or the Conservation District to review your plan



PDSC Instructions

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DEP PRE-DEVELOPMENT SITE CHARACTERIZATION SPREADSHEET INSTRUCTIONS

Revised, February 19, 2025

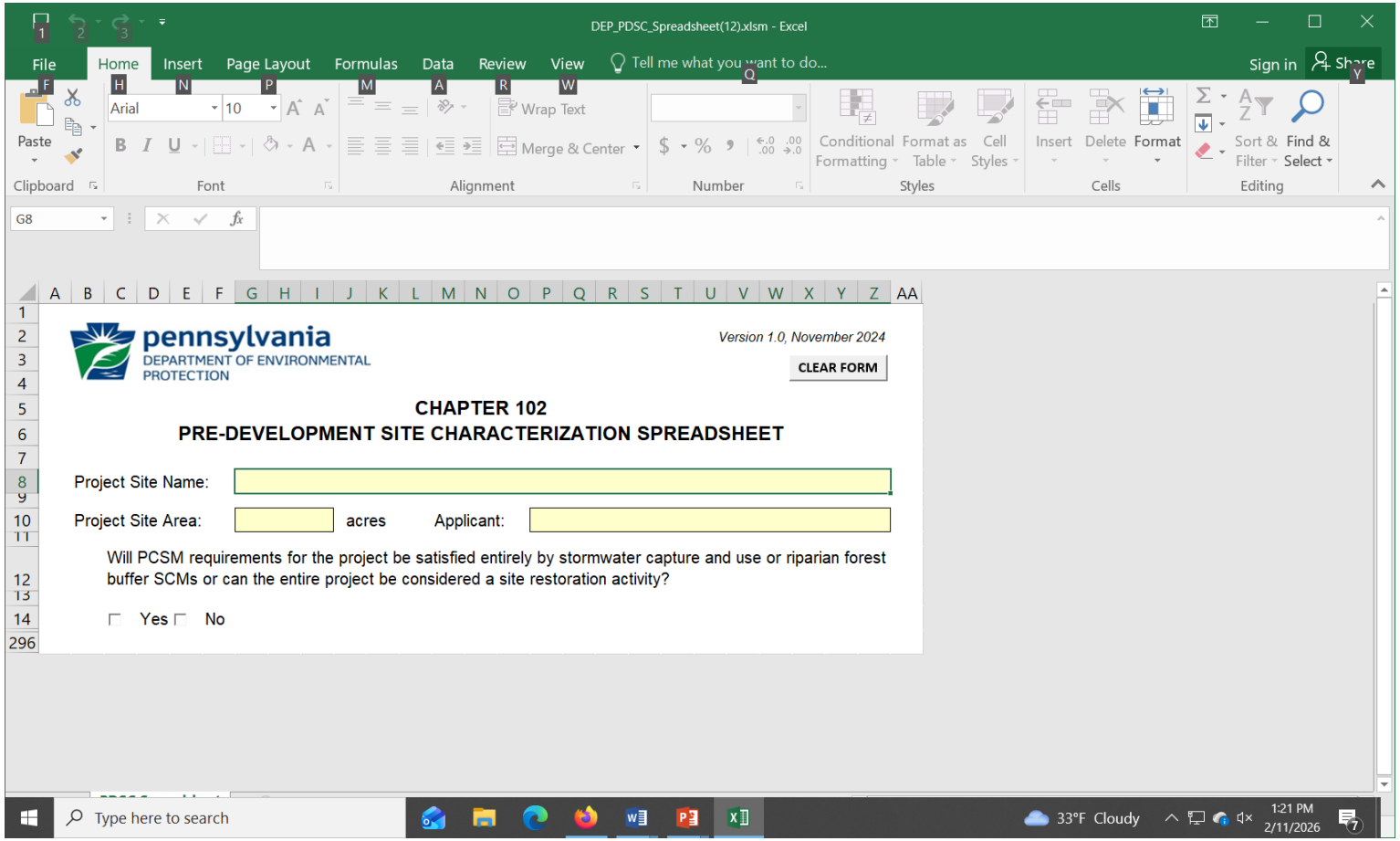
Introduction

The Department of Environmental Protection (DEP) has developed the Pre-Development Site Characterization (PDSC) Spreadsheet (Spreadsheet) to facilitate implementation of the requirements of 25 Pa. § 102.8(g)(1). The Spreadsheet was designed using the latest version of Microsoft Excel® and is in Excel macro workbook (XLSM) format. Completion of the Spreadsheet is a requirement of PCSM Module 2 for most projects needing a permit under Chapter 102.

Users should check DEP's website periodically for updates to the spreadsheet and instructions by visiting www.dep.pa.gov/constructionstormwater and selecting "E&S Resources". In general, DEP/CCD will accept older versions of the spreadsheet no more than 6 months following the revision date of the spreadsheet. DEP/CCD also reserves the right to request completion of the latest version of the spreadsheet for any project.

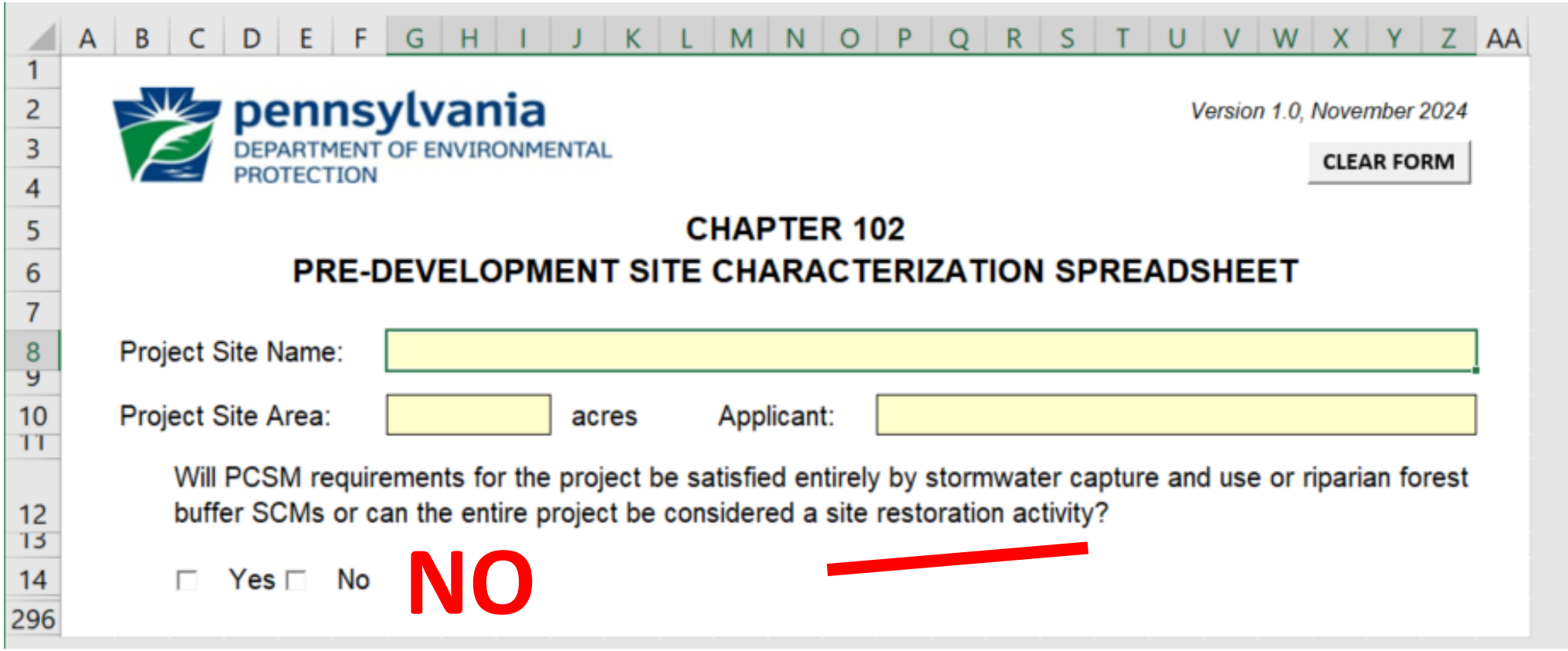
Questions on the use of the spreadsheet can be directed to the Bureau of Clean Water at **RA-EPCHAPTER102@pa.gov**.

Filling the Spreadsheet… similar to other DEP spreadsheets.



Use Tab, Arrow, or Enter keys to move from cell to cell. Clicking with the mouse may result in validation errors.

The very first question is the most important!!



Site Restoration is a very specific activity

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Bureau of Clean Water

Chapter 102 Site Restoration Projects

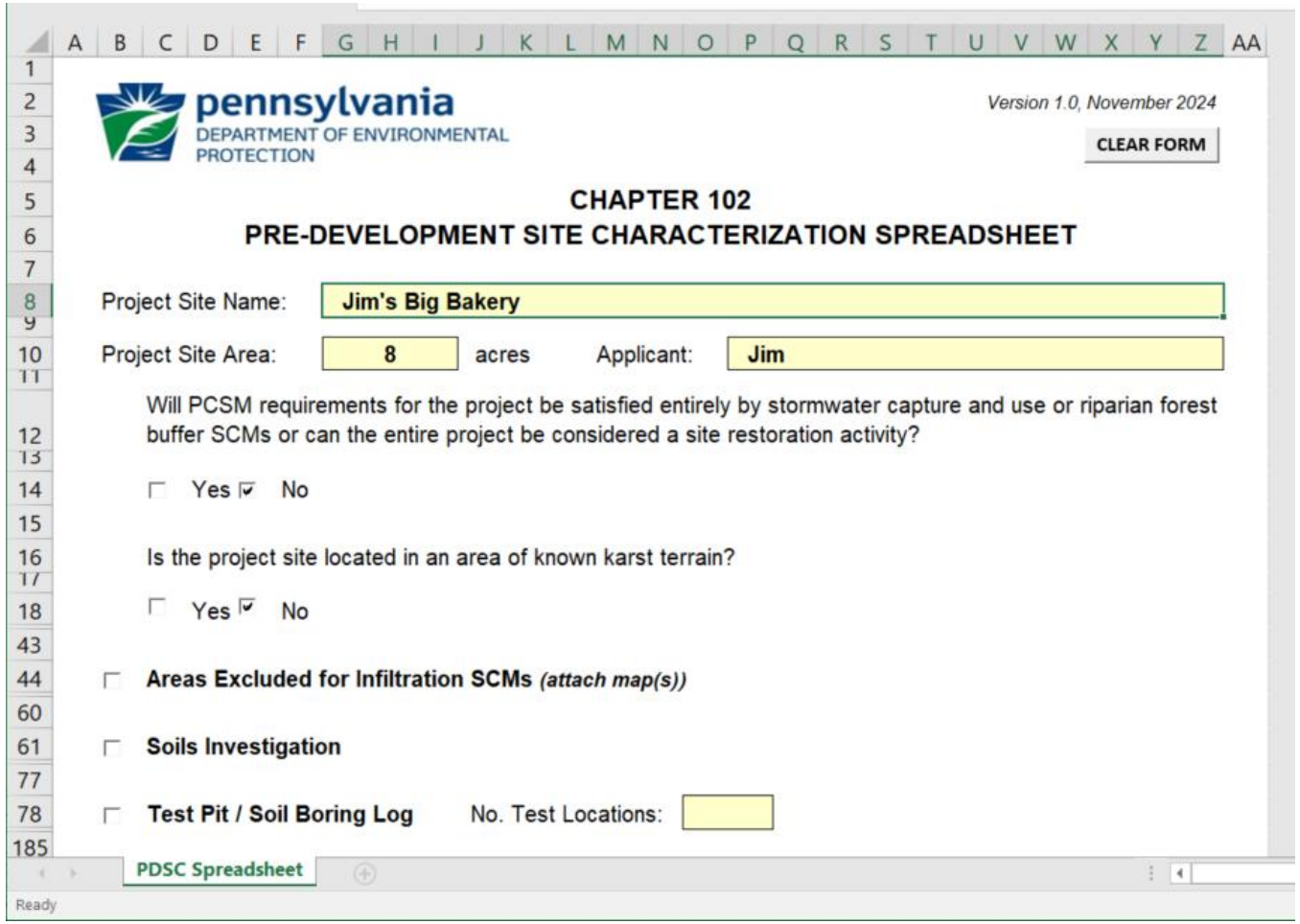
Frequently Asked Questions (FAQ)
August 15, 2023
Revised, September 8, 2023
Version 1.1

Background

According to the Department of Environmental Protection's (DEP's) regulations at 25 Pa. Code § 102.8(n), the portion of a site reclamation or restoration plan that identifies post-construction stormwater management (PCSM) best management practices (BMPs) to manage stormwater from

One of these pictures shows a Meadow… one does **not**.

Filling in the PDSC spreadsheet…



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Version 1.0, November 2024

CLEAR FORM

CHAPTER 102
PRE-DEVELOPMENT SITE CHARACTERIZATION SPREADSHEET

Project Site Name: Jim's Big Bakery

Project Site Area: 8 acres Applicant: Jim

Will PCSM requirements for the project be satisfied entirely by stormwater capture and use or riparian forest buffer SCMs or can the entire project be considered a site restoration activity?

☐ Yes ☑ No

Is the project site located in an area of known karst terrain?

☐ Yes ☑ No

☐ **Areas Excluded for Infiltration SCMs** ***(attach map(s))***

☐ **Soils Investigation**

☐ **Test Pit / Soil Boring Log** No. Test Locations:

PDSC Spreadsheet

Ready

As you start to fill in the spreadsheet, it expands and adds new boxes

Areas excluded for infiltration SCM's

Is the project site located in an area of known karst terrain?

☐ Yes ☑ No

☑ **Areas Excluded for Infiltration SCMs** *(attach map(s))*

ADD ROW | DELETE ROW

Exclusion	Description	Area (ac)
1	Areas of a project site that will be disturbed for underground utilities or other infrastructure and then restored to approximate original condition.	0.5
2	Areas that have been field verified, prior to or in conjunction with subsurface investigations for infiltration capabilities, as having shallow bedrock conditions that would not comply with separation distance guidelines contained in this Manual or local ordinances for infiltration-based SCMs.	0.5
3	Areas that have been field verified, prior to or in conjunction with subsurface investigations for infiltration capabilities, as having a seasonally high water table (SHWT) and/or hydric soil conditions that would not comply with separation distance guidelines contained in this Manual or local ordinances for infiltration-based SCMs.	0.5
4	Areas that are impervious land cover in the pre-construction condition and will not be disturbed and areas where road maintenance activities will occur as defined at 25 Pa. Code § 102.1.	0.5

Area Unsuitable for Infiltration SCMs (ac):	**2**
Area Potentially Suitable for Infiltration SCMs (ac):	**6**

☑ **Soils Investigation**

PDSC Spreadsheet

Ready

There are 12 possible exclusions for infiltration SCMs. Use these exclusions wisely to help yourself!

Make sure your exclusion selections are reasonable

5. Areas that are defined at 25 Pa. Code § 102.1 as surface waters and waters of this Commonwealth and areas that are defined at 25 Pa. Code § 105.1 as floodways and floodplains.

6. Areas where soils at horizons conducive to infiltration for a project are known to contain pollutant concentrations exceeding the medium-specific concentrations (MSCs) contained in 25 Pa. Code Chapter 250, Appendix A, Tables 3 and 4 (Soil to Groundwater Numeric Values, Used Aquifers, TDS ≤ 2,500 mg/L, for residential or non-residential development).

7. Existing areas on a site that will be protected long-term as a Natural Stormwater Feature SCM and areas intended for establishment or enhancement of a riparian buffer or riparian forest buffer SCM.

8. Areas that will not be disturbed where slopes exceed 20%, including 10 feet from the top and toe of slope.

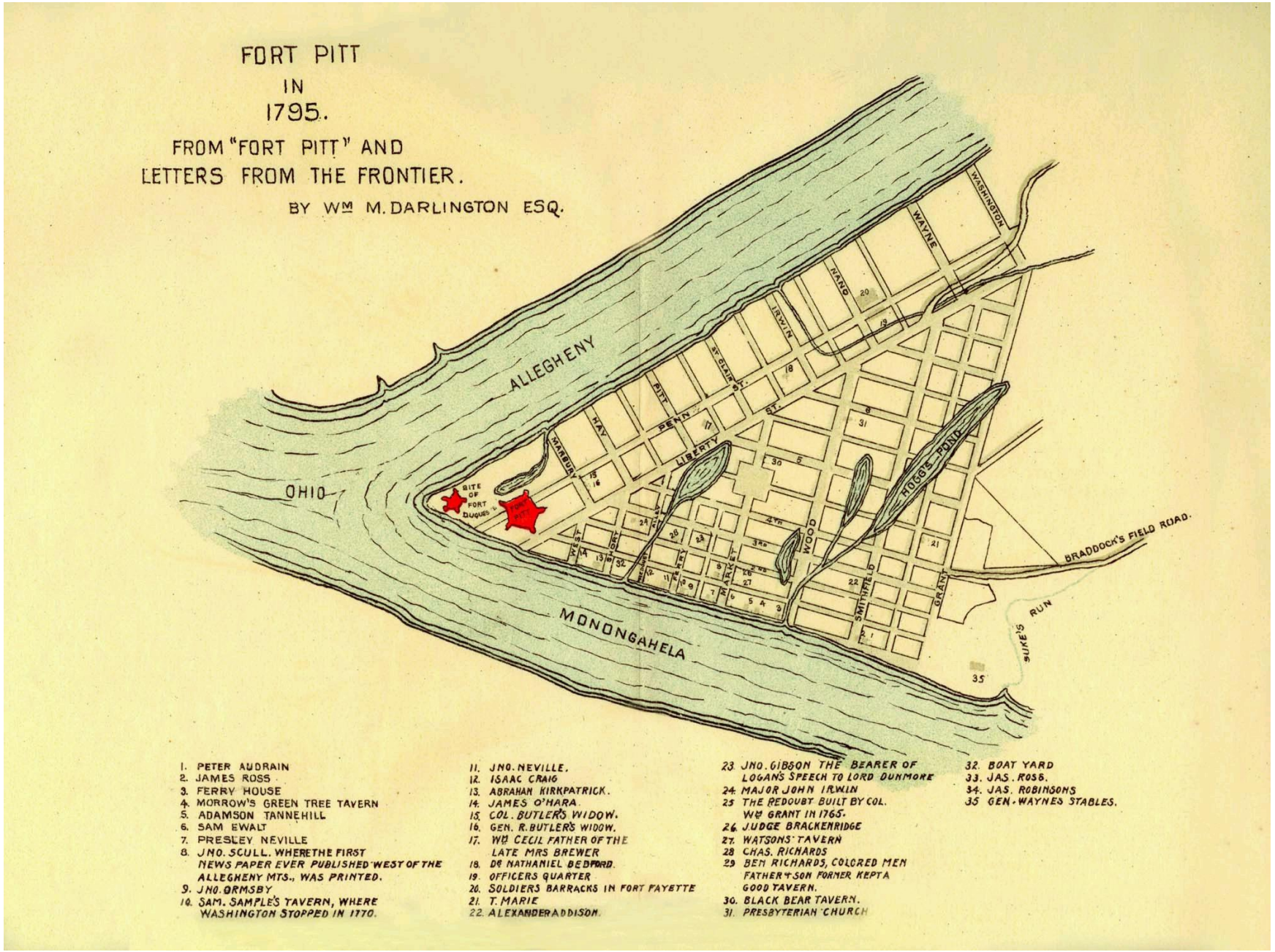
9. Areas that must be avoided to comply with laws regarding the protection of threatened and endangered species.

10. Upland areas that are remote from earth disturbance activities and would be unable to receive stormwater from new impervious surfaces by gravity flow.

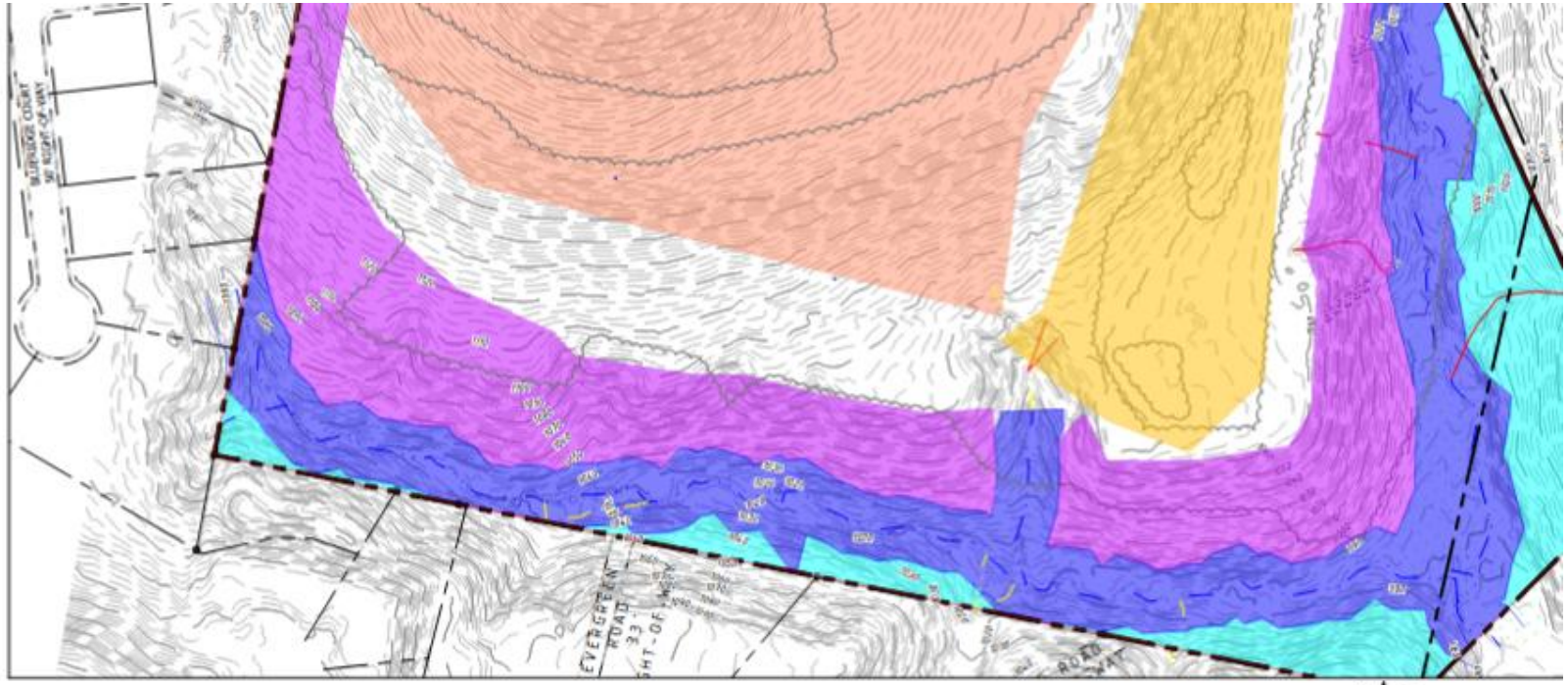
11. Areas where infiltration could, in the opinion of a licensed professional, lead to public safety concerns and/or pollution based on field observations or studies.

12. Other areas that must be avoided to meet setback guidance or other requirements of local ordinances.

Attach a map showing the areas excluded for infiltration SCMs.



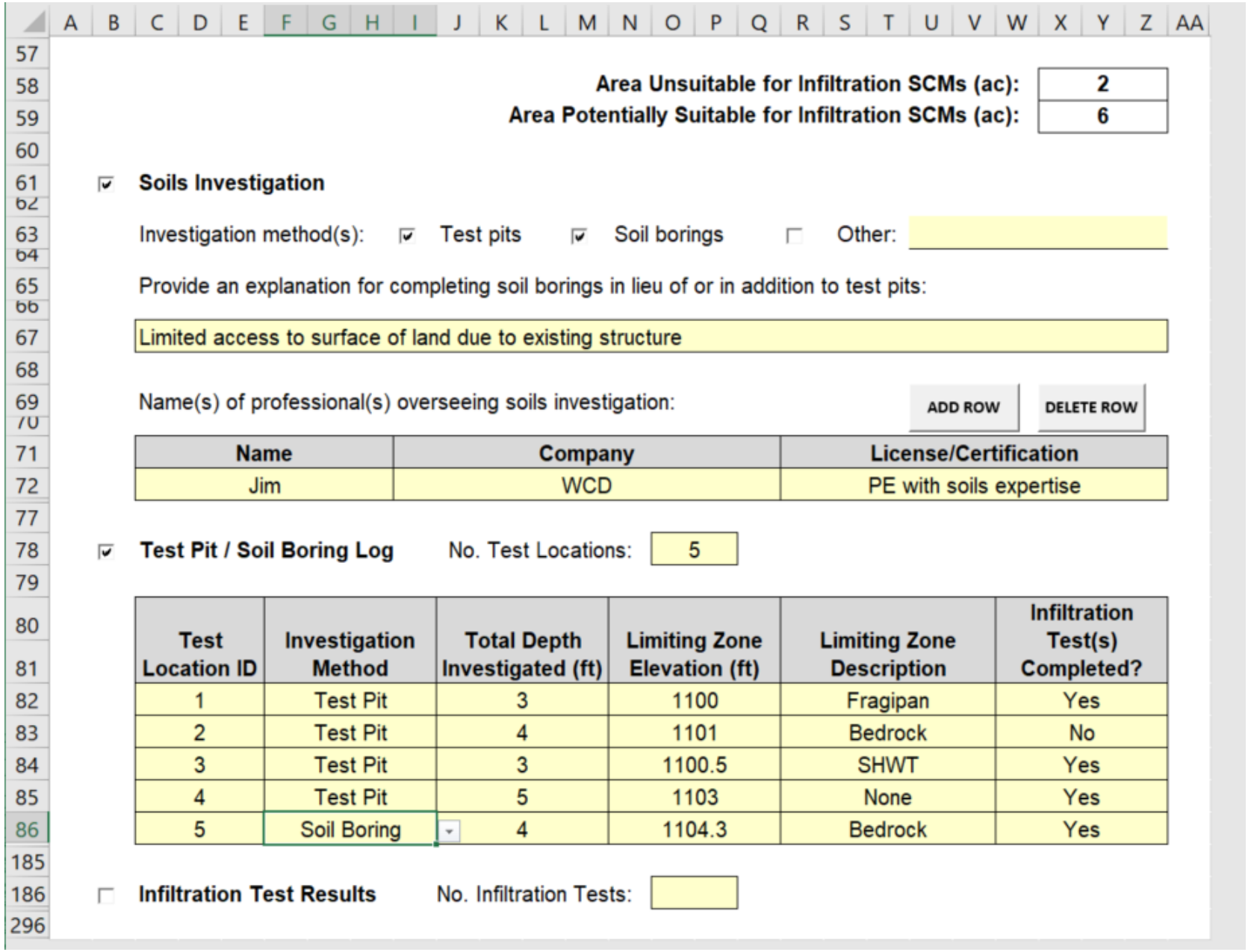
A very clear example of a PDSC exclusion area map



Exclusion	Description	Area (ac)
2	Areas that have been field verified, prior to or in conjunction with subsurface investigations for infiltration capabilities, as having shallow bedrock conditions that would not comply with separation distance guidelines contained in this Manual or local ordinances for infiltration-based BCMs.	14.2
5	Areas that are defined at 25 Pa. Code § 102.1 as surface waters and waters of the Commonwealth and areas that are defined at 25 Pa. Code § 105.1 as floodways and floodfringe.	13.5
8	Areas that will not be constructed where slopes exceed 20%, including 10 feet from the top and top of slope.	15.9
10	Upland areas that are remote from earth disturbance activities and would be unable to receive stormwater from near impervious surfaces by gravity flow.	4.5
11	Areas where infiltration could, in the opinion of a licensed professional, lead to public safety concerns and/or pollution based on field observations or studies. RED CLAY	22.1

Area Unsuitable for Infiltration BCMs (ac):	69.8
Area Potentially Suitable for Infiltration BCMs (ac):	17.2

You have to dig soil test pits.



Area Unsuitable for Infiltration SCMs (ac):	2
Area Potentially Suitable for Infiltration SCMs (ac):	6

☑ **Soils Investigation**

Investigation method(s): ☑ Test pits ☑ Soil borings ☐ Other:

Provide an explanation for completing soil borings in lieu of or in addition to test pits:

Limited access to surface of land due to existing structure

Name(s) of professional(s) overseeing soils investigation: ADD ROW DELETE ROW

Name	Company	License/Certification
Jim	WCD	PE with soils expertise

☑ **Test Pit / Soil Boring Log** No. Test Locations: 5

Test Location ID	Investigation Method	Total Depth Investigated (ft)	Limiting Zone Elevation (ft)	Limiting Zone Description	Infiltration Test(s) Completed?
1	Test Pit	3	1100	Fragipan	Yes
2	Test Pit	4	1101	Bedrock	No
3	Test Pit	3	1100.5	SHWT	Yes
4	Test Pit	5	1103	None	Yes
5	Soil Boring	4	1104.3	Bedrock	Yes

☐ **Infiltration Test Results** No. Infiltration Tests:

In general, a minimum of 4 test pits is required across a site.

And the Department requires one infiltration test per 40,000 square feet, distributed across the site.

You will need to do two infiltration tests per SCM,
at the elevation where you plan to have infiltration take place.

Use the Geometric Mean to find the average infiltration rate among the various tests.

Recommended, or not recommended, ways to test for infiltration.

Core Boring

Dual-Head Infiltrometer

Hand Auger

Trench Pit

Modified Philip Dunne

Single Ring Infiltrometer

Double Ring Infiltrometer

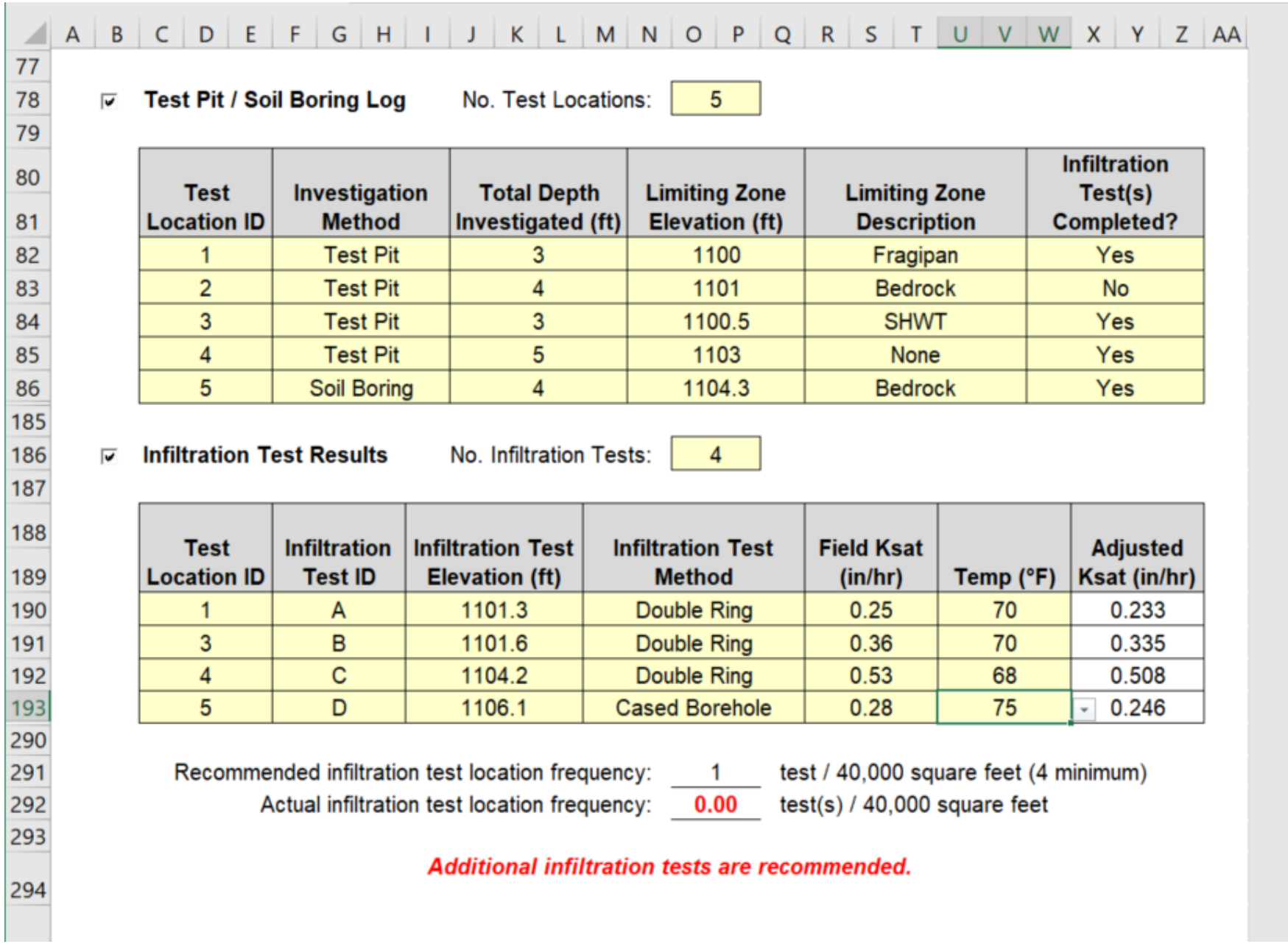
Source: PA DEP

Boreholes and infiltration testing…

- You can’t observe the bottom of the hole
- You can’t verify that the casing is “seated” in the soil
- The spreadsheet instructions require you to do two infiltration tests in each borehole
- The “factor of safety” for borehole test results is usually 2 but can be 3 depending on soil type

Enter the number of infiltration tests.

(Read the instructions carefully to understand the recommendations)



☑ **Test Pit / Soil Boring Log** No. Test Locations: 5

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3	Test Pit	3	1100.5	SHWT	Yes
4	Test Pit	5	1103	None	Yes
5	Soil Boring	4	1104.3	Bedrock	Yes

☑ **Infiltration Test Results** No. Infiltration Tests: 4

Test Location ID	Infiltration Test ID	Infiltration Test Elevation (ft)	Infiltration Test Method	Field Ksat (in/hr)	Temp (°F)	Adjusted Ksat (in/hr)
1	A	1101.3	Double Ring	0.25	70	0.233
3	B	1101.6	Double Ring	0.36	70	0.335
4	C	1104.2	Double Ring	0.53	68	0.508
5	D	1106.1	Cased Borehole	0.28	75	0.246

Recommended infiltration test location frequency: 1 test / 40,000 square feet (4 minimum)

Actual infiltration test location frequency: 0.00 test(s) / 40,000 square feet

Additional infiltration tests are recommended.

Recommendations

2. Potential Infiltration Capabilities

- Infiltration may be feasible and must be maximized.

Test Location ID	Infiltration Test ID	Infiltration Test Elevation (ft)	Infiltration Test Method	Field Ksat (in/hr)	Temp (°F)	Adjusted Ksat (in/hr)
IT1	IT1	525	Double Ring	0.5	60	0.550
IT2	IT2	529.5	Double Ring	0.39	60	0.429
IT3	IT3	527.5	Double Ring	0.33	60	0.363
IT4	IT4	526	Double Ring	0.21	60	0.231

Recommended infiltration test location frequency: 1 test/40,000 square feet (4 minimum)
Actual infiltration test location frequency: 0.9 test(s)/40,000 square feet

The coefficient of variation (CV) for infiltration test results is relatively low (0.34.) Additional infiltration tests may be unnecessary at the discretion of the professional.

Based on Ksat results alone (not considering limiting zones,) opportunities for infiltration SCMs may exist on-site. These opportunities must be maximized to the extent practicable.

Source: PA DEP

Recommendations—if you disagree, you need a professional to justify why you disagree and present documentation.

- *The coefficient of variation (CV) for infiltration test results is relatively low (__). Additional infiltration tests may be unnecessary at the discretion of the professional*. This response will be displayed if the Actual Infiltration Test Location Frequency is less than 1 but at least 0.5 AND the CV of the infiltration test results (i.e., the standard deviation of test results divided by the average of test results) is less than or equal to 0.5. In these cases the professional overseeing the PDSC may conclude that subsurface conditions are sufficiently uniform across the site such that additional test locations are not warranted.

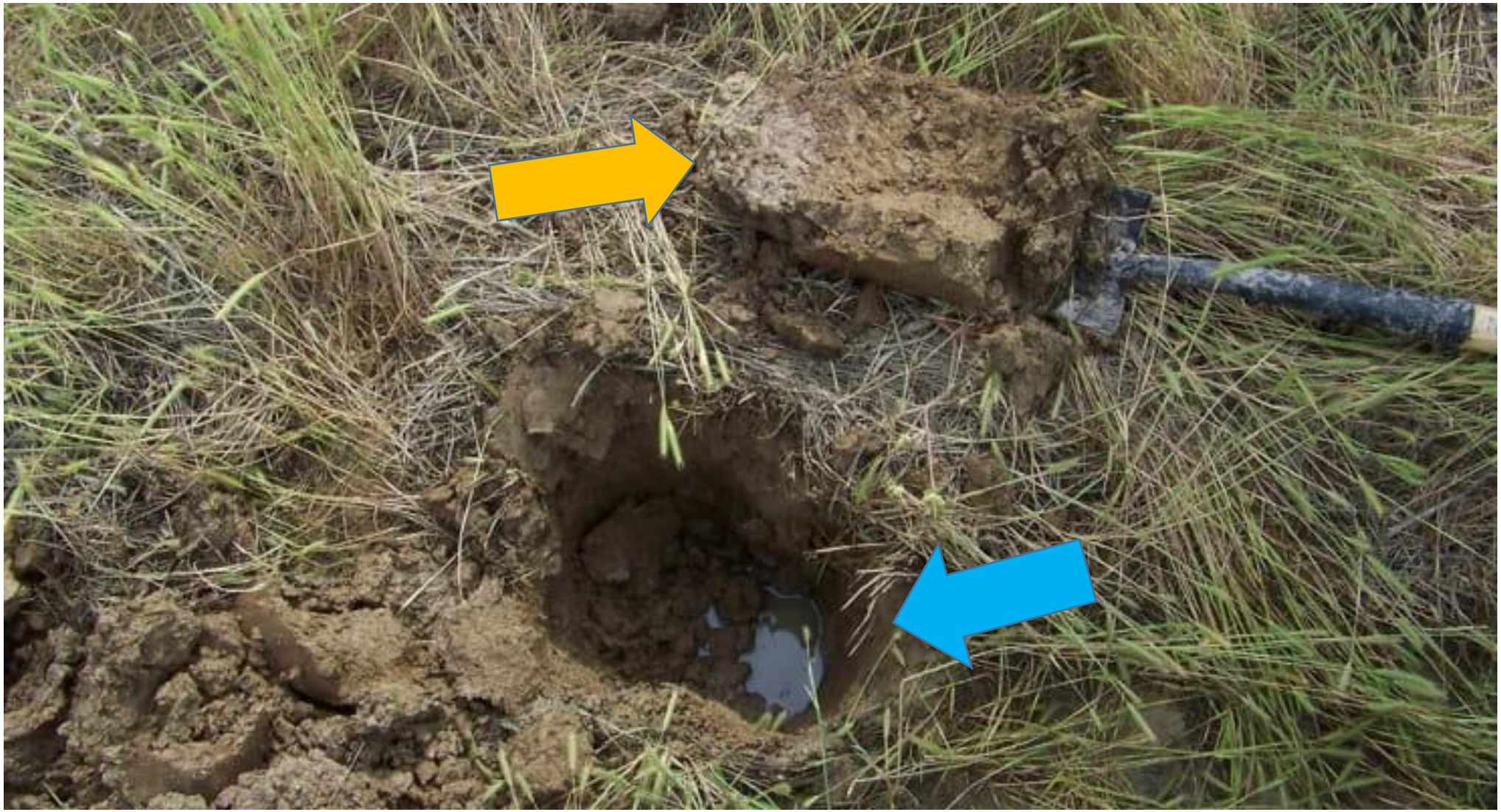
- *The coefficient of variation (CV) for infiltration test results is moderate to high (__). Additional infiltration tests are recommended*. This response will be displayed if the Actual Infiltration Test Location Frequency is less than 1 but at least 0.5 AND the CV of the infiltration test results exceeds 0.5. In these cases the variability of infiltration results is sufficiently high that additional test locations may be warranted.

2. **Site infiltration capabilities** – The second recommendation will populate if additional infiltration testing is not recommended and addresses whether the site has the potential for infiltration-based SCMs. The following are possible responses:

   - *Based on Ksat results alone (not considering limiting zones), opportunities for infiltration SCMs may exist on-site. These opportunities must be maximized to the extent practicable*. This response will be displayed when sufficient tests were completed, and one or more infiltration test results exceeds 0.25 inch/hour.

   - *Infiltration potential may be limited and use of other options should be considered*. This response will be displayed when sufficient tests were completed, and all infiltration test results are less than or equal to 0.25 inch/hour.

A Seasonal High Water Table will limit your ability to infiltrate



Abandoned mine lands limit your ability to infiltrate.

PDSC success?

- Make sure you follow the instructions
- Show test pit and infiltration test locations on the plan
- Follow the SWM Manual's protocols to conduct the infiltration tests
- Check to be sure the numbers on the PDSC spreadsheet match what's in the PCSM spreadsheet and what's on the drawings.
- Provide a professional opinion to back up your information

If it doesn't infiltrate, then you have other options for stormwater management…

PDSC

is your friend

Westmoreland Conservation District