



Assessing Your Site to Protect Water Quality

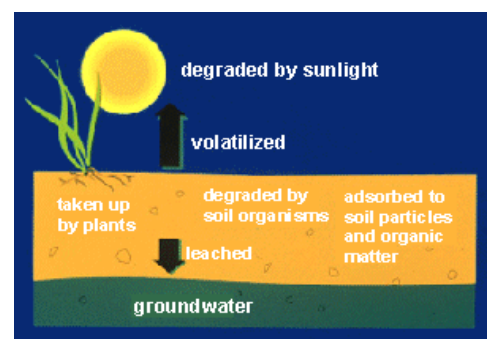


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Everything we do affects our environment: how we maintain our cars; what cleaners we use; how we build our houses and what we do in our yards; even what we flush down the toilet. The **physical characteristics** of your property can determine whether or not the practices or activities on your property are harmful to your health or the environment. Some of these factors include soil type, slope of the land, depth and type of bedrock, and depth to ground water. Identifying the physical characteristics of your property can help you understand how the land around your home can aid or hinder efforts to protect your health and the environment.

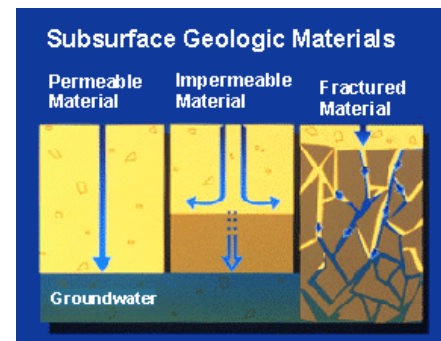
Knowing the type of **soils** on your property is a key to reducing pollution risks. The soil provides a life support system for plants and acts as a filter to reduce ground and surface water (gut, pond, and coastal water) pollution. Coarse textured soils such as sands are more vulnerable to ground water pollution. These soils have larger pore spaces between the soil particles that allow water to carry contaminants quickly to ground water. Finer textured soils such as silts, loams and clays slow water movement and provide more filtering. They allow soil organisms to break down contaminants before they reach ground water. However, these soil types are more prone to storm water runoff and may increase surface water contamination risks. To test your soil texture, contact the UVI Cooperative Extension Service or consult the [Soil Survey of the U.S. Virgin Islands](#).



Natural pollutant attenuation (break-down) processes.

Most pollutant breakdown occurs in the soil. Therefore, sites with shallow or sandy soils over fractured bedrock have a higher pollution risk potential. Generally, soils that are less than three feet to bedrock are high risks to ground water contamination, and subsequent surface water pollution. The type of bedrock below the soils also impacts ground water contamination risks. Highly fractured bedrock, limestone or caliche can provide a direct path for pollutants to enter ground or surface waters.

The depth to the water table below your property may also impact water quality. Deeper aquifers generally have lower pollution risks than shallow aquifers. Water tables that are less than 10 feet from the soil surface are considered to have high pollution risk. Shallow, contaminated ground water can also quickly transport pollutants to guts and coastal waters.



Geologic factors' affect on pollution potential.

Soil erosion happens when water moves across the soil surface, picking up and moving soil particles. This process can be accelerated with intensive land use and can harm water quality with sediment, nutrients, oils and grease, and other chemicals attached to soil particles. **Sediment is the most prevalent pollutant impairing water quality in the Virgin Islands.** Erosion of productive topsoil can stress crops, gardens and landscapes by removing the nutrient-rich upper layer of soil that plants need to thrive. Soil eroded from yards, driveways, gardens and construction sites can damage downhill properties and block roadways. Landslides can damage homes and cause road bed cave-ins. Finally, eroded soil smothers coral reefs and seagrass beds, clouds water, impairs recreational use of coastal waters (for swimming, bathing, snorkeling, and diving), and harms fisheries. By conserving soil, you will help to protect water quality and maintain the long term productivity of your land. Soil erosion can be controlled by using conservation and/or best management practices.

Runoff from storm water, drainage, or irrigation practices, can also harm nearby surface waters. The level of impact to surface waters is determined by the amount of storm water runoff, the distance to surface waters, the land slope, the contaminants in the path of the running water, and the conservation practices you use.

After completing your homesite assessment on the next page, make a **map** of your homesite showing buildings, roads, septic system, and natural features. This map can help you identify potential risk areas on your property or risks uphill from your property. USDA-NRCS, UVI-CES, or DPNR-CZM or DEP can help you create a homesite map and develop or revise a landscape plan to conserve soil and water and minimize pollution risk on your property.

Assessing the Physical Characteristics of Your Homesite

Record the characteristics of your homesite on the chart below. For each characteristic, three choices are given describing situations or conditions that could lead to high, medium or low risks to human or environmental health. Mark your risk level in the right hand column. For some questions, information from the [Soil Survey of the U.S. Virgin Islands](#) will help. Some choices may not be exactly like your situation, so choose the response that best fits. If no choice is applicable, leave that line blank.

	LOW RISK	MEDIUM RISK	HIGH RISK	RISK
Soil texture and risks to guts, ponds, wetlands or coastal waters from runoff	Sand / gravel (large particles)	Silt/loam (midsize particles)	Clay (very tiny particles)	☐ Low ☐ Medium ☐ High
Soil texture and risks to groundwater from infiltration	Clay (very tiny particles)	Silt/loam (midsize particles)	Sand gravel (large particles)	☐ Low ☐ Medium ☐ High
Soil depth	Deep (over 12 feet)	Moderately deep (3-12 feet)	Shallow (less than 3 feet)	☐ Low ☐ Medium ☐ High
Bedrock	Solid, not permeable or fractured	Solid limestone or sandstone	Fractured bedrock - any kind	☐ Low ☐ Medium ☐ High
Depth to water table	Over 20 feet	10-20 feet	Less than 10 feet	☐ Low ☐ Medium ☐ High
Nearness to surface water	Over 100 feet	25-100 feet	Less than 25 feet	☐ Low ☐ Medium ☐ High
Slope	Less than 10% slope	10 - 25% slope	Over 25% slope	☐ Low ☐ Medium ☐ High

Responding to Risks

You can't depend solely on the physical characteristics of your soil, bedrock or other site features to protect water quality. You must take informed steps to prevent pollution. Although you can't change your soil type or bedrock, you can take these factors into account when choosing home management practices that are better for preventing environmental problems. Note especially the medium and high risks you identified. Keep them in mind as you complete your homesite map and review other home water quality assessment worksheets.

Who to Call for Information or Assistance

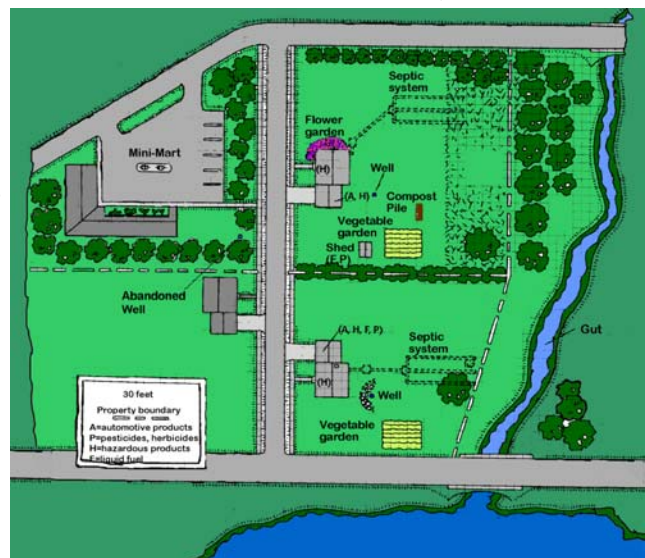
USDA Natural Resources Conservation Service: (340) 692-9662, x. 106

UVI Cooperative Extension Service - St. Croix: (340) 692-4080

UVI Cooperative Extension Service - St. Thomas/St. John: (340) 693-1080

DPNR Coastal Zone Management Program or Environmental Protection Division - St. Croix: (340) 773-1082

DPNR-CZM or DEP - St. Thomas - St. John: (340) 774-3320



Example homesite map, showing surrounding potential pollution sources.