Sources of Soil
Soil is defined as any substance, solid or liquid, that is present in a place where it is not wanted. Using this definition, a facility’s main sources of soil are:
- **Tracked-in Soil**—Usually small and oily particles of silica (sand). The most important part of any green cleaning program is the use and proper maintenance of 12 - 15 ft walk-off mats at all regularly used building entrances.
- **Airborne Soil**—These are small particles of dust, droplets of oils, auto exhaust, pollen, and human dander. Air conditioning and heating systems can carry airborne soil throughout a facility. Using OGS-approved vacuum cleaners is one way to reduce the amount of airborne soil in a building.
- **Spills**—Spills on carpeting and hard surfaces are usually noticeable and occupants should report them in a timely manner. In most cases, custodians can clean these spills easily if they are immediately notified. However, unreported spills are harder or impossible to clean later.

Soil pH
By knowing the pH of a soil, custodians are better able to match the right cleaning product for its removal. A pH less than 7 is acidic, and a pH greater than 7 is alkaline; the pH of most soils ranges between 3 and 9 (weak acids to weak alkalines).
- **Examples of Acidic Soils**: mixtures of organic matter, oils, dust, and dirt.
- **Examples of Alkaline Soils**: mixtures of organic matter with mineral deposits (scale), rust, and urine.

Selecting Cleaners Based on Soil pH
1. Select detergents/cleaners with the opposite pH of the soil being cleaned (acid cleaner with alkaline soils, and alkaline cleaner with acidic soils). The pH of cleaners can be found on the product’s Material Safety Data Sheet (MSDS).
2. With only two types of soil, you may only need two types of cleaners—an acid cleaner and an alkaline cleaner. This reduces the number of products needed in inventory.
3. **However**, always check the manufacturer’s recommendations for cleaner use before applying any cleaning solutions to a surface. Certain floor types require specific type cleaners and failure to follow the recommendations may void their warranty.
4. For soils mixed with oils and grease, make sure the cleaning product contains emulsifiers, which help remove the oil and grease from surfaces.

5. **If you’re not sure of a soil’s pH**, use an alkaline cleaner first. If the soil is not removed, try an acidic cleaner. Make sure to rinse and dry the surface between cleaning attempts.

Key Areas that Define Levels of Clean
Custodians should be familiar with the four (4) key areas used in defining cleaning levels, and know the level of clean expected for each area. The four (4) key areas are:
1. Floors, corners and base molding;
2. Vertical and horizontal surfaces - counters and ledges;
3. Washroom and shower fixtures, tile, light fixtures; and
4. Trash containers and pencil sharpeners.

By knowing the level of clean requirements, custodians are better able to focus on meeting them by adjusting their work activities.

Entryways
- Poorly equipped and maintained entryways allow soil to enter a building, which requires additional work to remove.
- Placing and properly maintaining adequately sized walk-off mats at each entryway can reduce 80% of soil entering a building.
- Main entryways as well as from entryways accessible from playing fields/locker rooms should be designed with a three-part matting system: (1) exterior grill or grates, (2) drop-through mats between the sets of double doors or vestibule area, and (3) 15 feet of interior walk-off matting.
- The interior walk-off matting should be wide enough to prevent people from walking off the mat prior to reaching the end of it.

Basic Worker Safety
- Be aware of chemicals present and used in your work place;
- Make sure all containers are properly labeled and tightly secured;
- Never mix chemicals unless it is directed by the product manufacturer;
- Know how to read and understand the MSDS of every product you use;
- Read and understand your facility’s written Hazard Communication Plan;
- Always wear the appropriate personnel protective equipment (PPE) for handling chemicals;
- Use an automated chemical dispenser/dilution system whenever possible to create accurate dilutions and reduce chemical contact;
- Only operate equipment you have been trained to use;
- Follow the manufacturer’s recommendations for the operation and use of equipment and chemicals; and
- Maintain equipment in good working order
Microorganisms
- Living things that are too small to be seen by the naked human eye.
- Most familiar types are bacteria, fungi (such as mold), and viruses.
- They are everywhere and are naturally present on and in the human body.
- The vast majority is not harmful to humans and some actually serve beneficial functions.

Reducing Bacterial and Viral Infections
- Most common infections, like colds, flu or simple skin infections are spread by direct person-to-person contact or contact with microorganisms in droplets created by coughing or sneezing.
- People may also become infected by touching a contaminated surface and then touching their mouth, nose or open wound.
- Microorganisms may live for hours or days on building surfaces where they can contribute to the spread of disease as surfaces are touched.
- Proper hand hygiene can help control the spread of many common infections. Hands should be washed with soap and warm water for at least 20 seconds.
- Soap and water hand washing is preferred to use of alcohol-based sanitizers, especially when hands are visibly soiled and after toileting.
- Only use an alcohol-based hand sanitizer (with at least 60% alcohol) when soap and water are not available. Thoroughly wipe hands on a clean cloth or paper towel before applying hand sanitizer. Always ensure proper supervision of young children using alcohol-based sanitizers.
- When coughing or sneezing, cover your mouth and nose with a tissue, or cough/sneeze into your upper arm if you don’t have a tissue. Properly dispose of used tissues immediately after use.

Hand Hygiene
- Hands should be washed before eating, drinking, and smoking, and after using the bathroom, touching high-hand contact surfaces (door knobs, railings, etc.), returning to your office/home, blowing your nose, assisting an ill person, between cleaning tasks and after handling chemicals.
- Custodians should be aware that their hands can become contaminated from small holes/tears in gloves so it is essential to wash hands or use hand sanitizer after removing protective gloves!

Methicillin resistant *Staphylococcus aureus* (MRSA) Precautions
- Practice good hand hygiene and skin care.
- Keep cuts and wounds clean and covered with a bandage until healed.
- Avoid contact with other individuals’ cuts, wounds and used bandages.
- Do not share personal hygiene items like towels or razors.

Disinfectants/Sanitizers
- Disinfectants and sanitizers are not considered cleaners so they are not on the OGS approved product list.
- OGS only permits bathroom cleaners to claim disinfectant properties.
- Disinfectant and sanitizer products must be registered with the United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC).
- Follow proper safety precautions provided on the product labels when applying disinfectants/sanitizers to surfaces.
- Cleaning is a necessary first step to sanitizing or disinfecting surfaces since soils reduce or even eliminate their effectiveness.
- In most cases, simply washing surfaces with a general purpose cleaner and water is adequate to reduce the levels of microorganisms - disinfection may not be required.
- However, the use of disinfectants and sanitizers in certain areas (e.g. food service areas) and other circumstances (e.g. disease outbreaks) may be required or recommended by health and other laws, regulations or guidelines.
- It is not necessary to routinely disinfect or sanitize all floors and surfaces in schools and office buildings.
- Disinfected surfaces become recontaminated quickly by airborne soils or during use.
- Disinfectants and sanitizers kill or otherwise adversely affect/harm living organisms, which can include people.

Cold Water-Formulated Cleaners
- Cold water-formulated cleaners are as effective as hot water cleaners;
- Hot water melts and spreads oils, fats, and petroleum products that do not dissolve in water resulting in residue left behind that speeds up the collection of new soil;
- Hot water cools quickly after contact with surfaces causing the melted soil to reattach to the cold surface; and
- Hot water wastes energy resources and can cause burns.
General Cleaning Rules to Follow

- Clean areas starting with surfaces near the ceiling (higher) and working toward the floor (lower). For example, clean upper shelves and then lower shelves.
- Perform dry-dusting or mopping before wet procedures.
- Start cleaning the floor at the furthest corner of the room and work towards the exit.
- Clean first, then disinfect or sanitize only if necessary.

Always follow the manufacturer’s recommendations for product use!

Basic Cleaning Methods/Practices

Below are key routine cleaning methods and practices used by custodians. Detailed step-by-step cleaning procedures are described in OGS’s continuing series of cleaning and maintenance training manuals.

Dusting

- Dry-dust surfaces using microfiber dusters or cloths to remove dust buildup before cleaning with liquids.
- Dust from higher levels to lower levels to prevent airborne dust from falling on already cleaned surfaces.

Wiping

- Use the “Spray and Wipe” method (spray cleaning solution on the soiled surface and then wipe clean) for cleaning visible soils found on mirrors, toilets, and urinals.
- Use the “Damp Wipe” method (dampen the cloth with cleaning solution and then wipe surface clean) for surfaces requiring more controlled application of cleaner such as on paper towel dispensers and stainless steel appliances.

Dust-Mopping with Microfiber Products

- A microfiber dust mop traps soil and creates less airborne particles than a standard mop.
- Always select the appropriate-sized microfiber mop head for the space being cleaned.
- Replace the microfiber dust mop pad when it becomes too dirty to pick up more soil.
- Clean dust mop heads outside and away from open windows and doors. Cleaning dust mops inside will release dust back into the air.
- Dust-mopping removes surface soil in preparation for wet/damp-mopping or auto-scrubbing.

Wet/Damp-Mopping with Microfiber Products

- Always dust-mop an area prior to wet/damp-mopping to gather and remove loose soil and debris.
- When wet/damp mopping, start at the furthest location of the room and work towards the exit.
- Clean along baseboards first to reduce splatter and then mop the rest of the floor.
- Never place dirty microfiber mop heads back into the cleaning solution; replace them with a clean wet/damp mop head.
- For traditional mopping using microfiber string mop heads, replace the cleaning solution with fresh solution when the cleaning solution becomes dirty.

Auto-Scrubbing Floors

- Use an auto-scrubber to clean large floor areas quickly and effectively.
- Select the right brushes or pads for the cleaning job.
- Wet/damp-mop tight areas that the auto scrubber cannot reach, and then use a handheld squeegee to pull the water into the path of the auto scrubber.
- Make sure the equipment is in good working order and leaves no streaks.

Vacuuming

- Vacuuming is the most important and cost-efficient part of carpet maintenance!
- Vacuums should be properly maintained.
- HEPA filters and vacuum bags should be replaced according to the manufacturer’s recommendations. For some manufacturers, vacuum bags may need to be replaced when they become half full to maintain adequate performance.
- High traffic areas require thorough vacuuming to raise the carpet nap and remove dirt. Give the suction action of the vacuum enough time to remove the dirt.
- If possible, replace outdated vacuums with OGS approved vacuum cleaners with HEPA filters.
- Use Green Label certified vacuums designed for carpets when carpet cleaning.
- Make sure backpack vacuums are properly adjusted before use to protect against injury.

For additional information, visit the New York State Green Cleaning Program website at: Greencleaning.ny.gov
Or contact the OGS Environmental Services Units at: 518.408.1782