

HISTORIC GRAVESTONE RESTORATION AND CLEANING

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Terry and pupils at the Baker Cemetery in West Plattsburgh

The following is a compilation of **DOs** and **DON'Ts** for gravestone and cemetery restoration and cleaning.

Well-meaning volunteers performing simple cleaning and restoration can damage a stone beyond repair.

Only perform tasks for which you have received proper training.

Basic Cemetery and Gravestone Restoration

Volunteers can:

- Document the location of gravestones within the cemetery including transcription of stones, the layout of plots, and basic assessment of gravestone conditions
- Use photography (see below) to document gravestone description, location and conditions
- Mow and trim grass and planting in the cemetery

With proper training, volunteers can:

- Clean gravestones
- Straighten gravestones
- Reset fallen gravestones

Call a professional when:

- The stone is broken into several pieces

- The stone is too heavy to pick up without damaging it or you
- The stone is already damaged, or the integrity of the stone is compromised – i.e. spalling, delaminating or sugaring

NEVER REMOVE PIECES, PARTS OR INTACT GRAVESTONES FROM THEIR ORIGINAL PLACE IN THE CEMETERY. Gravestones should always remain in their original location in the cemetery to prevent further damage to the stone, to prevent being lost, and to mark the location of the grave.

Photography

- **NEVER** use any product – shaving cream, bleach, corn starch, flour, chalk, etc. to read or photograph a gravestone
- **NEVER** touch a gravestone when reading or photographing it
- To read or photograph a gravestone that is difficult to read, **use a mirror**. For this to work, go to the cemetery before noon on a day with plenty of sun and no clouds. Angle the mirror in front of the stone, reflecting the sunlight over the stone using a raking light technique. This allows shadows to form in the letters and symbols on the stone, making it easier to read and photograph.
- Alternately, go to the cemetery on a dark, cloudy day or at night, and **use a flashlight**. LED flashlights work best. By holding the light on the side of the gravestone, the same raking of light appears and makes the inscription easier to read.

Mowing and Trimming Grass and Planting

- **When mowing**, be sure to aim the grass clippings fly away from the stones. Grass sticking to the stone can cause staining, damage from erosion and biological growth on the stone.
- **When mowing**, never let the lawn mower touch the stones. It is better to let the grass close to the stone grow, than to get so close the stone is damaged.
- **When trimming** with a weed whacker, be sure not to touch the stone with the string. This causes damage to the stone with scratches and eventual weakening of the stone structure causing delamination
- **NEVER** let bushes, trees or large plantings get too large when located directly next to a gravestone. The Roots can cause the gravestones to fall over and increases the biological growth on the stone. Vines growing on the stone also affect the integrity of the stone.



Mary Carew Reynolds
Shelters Cemetery
Stone stabilized by iron bars
which are staining the stone

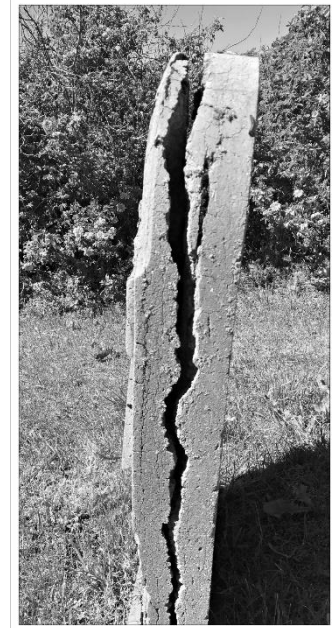
Restoring

- **NEVER** attempt to reset, restore or fix a gravestone until you have had the proper training
- **NEVER** use steel straps, bolts, pins, etc. to restore a gravestone
- **NEVER** use Portland cement, concrete, epoxies, caulk or automotive glue to repair a gravestone
- **NEVER** jam rocks around the edge of a gravestone in an attempt to make it stand straight
 - **NEVER** use metal shovels or trowels when digging around a gravestone. Only plastic trowels and wooden tamps should be used to prevent scratching the stone

Cleaning

- **NEVER** use any household products – bleach, ammonia, orange clean, 409, etc. to clean gravestones – No matter how mild you think it is or what the internet says

- **NEVER** use sandpaper, hard bristle or wire brushes, or metal tools of any kind
- **NEVER US A POWER WASHER TO CLEAN STONES** – this can cause sugaring
- **USE soft bristle brushes** - If the brush is not soft enough to scrub your face, do not use it
- **USE** plastic or wooden tools to prevent scratching the stones
- The only recommended wash for cleaning gravestones is **D/2 biological product**
 - D/2 was developed by conservators, who know the damage that can be done by cleaners containing acid or salts. D/2 has been specially formulated without these harmful agents. D/2 is a nearly pH-neutral quaternary ammonium solution with surfactants that help carry surface contaminants away. No other solution is more trusted by architectural and monument conservators.
 - D/2 has been successfully used to remove staining from a variety of surfaces including natural stones such as marble, granite limestone, sandstone, and slate; masonry surfaces such as brick and cast stone; concrete; wood; aluminum and vinyl siding; and canvas.
 - D/2 has been successfully used to clean millions of buildings and monuments. From the White House to Arlington Cemetery, D/2 is trusted to work and keep on working when results matter.
- **List of recommended supplies for each group**
 - (2) 1-gallon sprayers – 1 for water and 1 for D/2
 - 1 gallon D/2 biologic wash
 - Plenty of clean water, amount is dependent on number of stones to be cleaned
NOTE: Rainwater is best or good well water without iron or sulphur or metals
Municipal water may contain additives like chlorine, fluoride, etc. and well water that is softened contains salt that can discolor or damage the stones
- **List of recommended supplies for each volunteer present to clean stones**
 - 2 to 3 plastic buckets
 - Plastic paint scrapers
 - Nylon bristle toothbrush
 - Wooden craft sticks



An extreme case of layering of rock on Henry Worden's gravestone in West Hill Cemetery



Stafford Cemetery on the Butler Road
Lichen and Egyptian moss on the stone
A good candidate for D/2, using a brush, a scraper, a toothbrush and a craft stick

- Plastic spray bottle

Cleaning Procedure

- Be sure to select a date that is well after the last frost date in the spring and well before the first frost date in the fall. **It is critical that a frost not occur within 24 hours of cleaning** due to water saturation of the stone.
- Select a stone to be cleaned. Do not attempt to clean a stone that is damaged in any way
- Dilute D/2 with water – 60% D/2 to 40% water in a gallon spray bottle.
- Saturate the stone with clean water, followed by saturation with the D/2 water mixture

- Wait 20 or 30 minutes
 - Begin cleaning using plastic scraper and a large brush, rinsing with clean water as needed
 - Continue cleaning using toothbrush and craft sticks to reach smaller places
 - Rinse the stone with clean water
- Alternately, saturation with water, followed by full-strength D/2 may be performed without any scrubbing but the results are not immediately obvious and may or may not produce the same level of cleaning in the long term.

D/2 can be purchased from the following

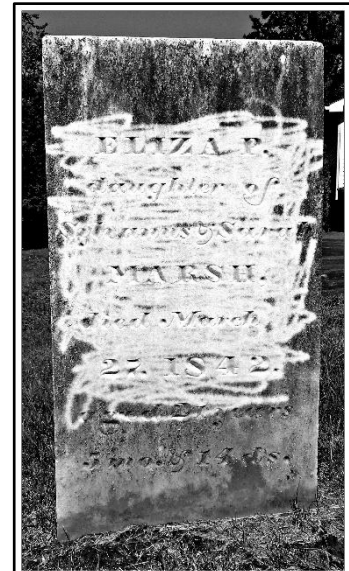
LimeWorks.us

Andrew deGruchy - Pennsylvania
 215-536-6706
 admin@limeworks.us
www.limeworks.us

Current prices as of June 2019

Quart - \$18.95 Gallon - \$41.95 5 gallons - \$189.00 55 gallons - \$1,890.00 all plus shipping

D/2 can also be bought locally and on the internet



Eliza P. Marsh
 Baker Cemetery
 Example of power washing

PRESSURE WASHING - may produce the desired superficial results on a gravestone, however, responsible cemetery associations are strongly opposed to the use of pressure washing. There is simply far too much risk to the stone using this method. We all think cemetery markers are indestructible, but every type, stone, metal or wood, can be delicate and have its special cleaning methods. Any water pressure over 40 psi has the potential to cause significant damage to stones, especially those made of marble or slate or older stones, depending on their condition. A standard home garden hose with a nozzle attached will put out on average about 50 psi and the nozzle may still cause the stream to be stronger than the stone can take. Many stones are antiques – would you put grandma’s china in the dishwasher?

The use of a pressure washing system on a gravestone will not only remove the thin outer surface of the stone but expose the softer interior pores - a process called sugaring. These newly exposed pores will catch and hold onto biological particles, grime and moisture that travel through the atmosphere. Trapped moisture within the stone from pressure washing will lead to a shorter stone life due to the freezing and thawing cycles in the North Country. If used on older stones, pressure washing can and will flake off entire layers of old brittle stone and remove the substances that hold the stones to their bases. Once moisture gets between the stone and its base, it’s only a matter of time until the stone topples.

In Clinton County, where freezing and thawing consistently wreak havoc on everything from buildings to plumbing to plant life and markers in cemeteries, why would we want to exacerbate the process by using pressure washers on our precious gravestones? We’ve all seen this destruction by Mother Nature in our cemetery walks.

When you make a cemetery visit, look around you. Do you want to be responsible for more destruction from pressure washing? Do you want to preserve the stones for future generations? Please recommend to your local cemetery associations that biological cleaners be used. They may take longer to clean the stone and require a hands-on approach by lots of volunteers but will help stones have a longer life.