for OLD MINES

What happens when the dust settles and the trucks are gone?

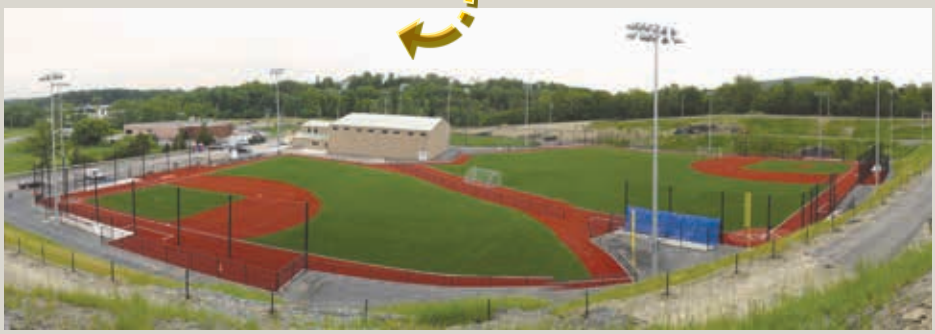
Thalle Industries, Inc.'s Fishkill Quarry is a great example of how mining and reclamation work can be done concurrently.

BY CHRISTOPHER S. MONACO, PG AND CHARLES C. ROLL | PHOTOS PROVIDED BY DEC

What happens when the dust settles, the trucks have gone, and the mine has closed its gate? We all know that mining is a necessary part of our daily lives; however, many people still believe that an "ugly hole" or "scar on the land" remains after the mining operation is finished. The reality is that former mines are all around us, but you may never actually realize it.

Many people shop in malls, work in industrial parks, or live in housing developments that were constructed at former mine sites.

A reclamation project in the town of Chester, Orange County, transformed a former quarry into a vibrant community sports facility with athletic fields and fitness trails.



"Over the years, many New York mines have received state and national awards for their outstanding reclamation efforts."

Believe it or not, you may even enjoy your favorite recreational activity on lands that used to be mines. Some mine sites have been transformed into popular golf courses, athletic fields, community parks, lakes for boating and fishing, and even works of art! Mines are also often reclaimed to provide wildlife habitat, and sometimes to encourage and sustain protected, endangered, or threatened species. Some of our food is even grown on former mined land. The large expanses of evenly graded land and soils enriched to support vegetative growth can create a desirable agricultural environment.

This wasn't always the case. It wasn't until April 1, 1975, that the Mined Land Reclamation Law (MLRL) became effective. Under this law, the Department of Environmental Conservation (DEC) regulates mining activities that remove more than 750 cubic yards of material within 12 successive months. Once the mining activities have ceased, all lands affected by mining that goes beyond the regulatory threshold must be returned to productive use, consistent with surrounding land uses and preferably enhancing property values.

The process of returning land to productive use is referred to as mined land reclamation. Reclaiming mines helps to protect water quality by stabilizing soils and reducing erosion and sedimentation into nearby surface waters. Removing any debris or equipment from the mine also helps prevent ground or surface water contamination that could occur from leaking containers and equipment.

To receive a mining permit, an application package must be submitted to DEC for review and approval. The package must include a detailed description of the proposed mining operation and how any environmental impacts will be addressed, as well as a detailed reclamation plan. The reclamation plan describes the final land use, topography, and vegetation type for the property. Additionally, applicants must provide reclamation financial security such as surety bonds, irrevocable bank letters of credit, or assignments of certificate of deposit, to guarantee that reclamation will be completed if the permittee is unable or unwilling to perform this responsibility. On occasion, DEC has had to use this financial security to undertake the reclamation.

Over the years, many New York mines have received state and national awards for their outstanding reclamation efforts. One such mine in the town of Chester, Orange County, was reclaimed by the Frozen Ropes Baseball Company. The former shale quarry now includes athletic fields that can be configured to accommodate several baseball and softball fields, a regulation-sized

soccer and football field, and other turf sports like lacrosse. Reclamation also provided a year-round, state-of-the-art indoor sports complex. The quarry benches, or step-like levels along the rock wall, were repurposed as natural seating areas and include a fitness trail with a variety of exercise stations.

Another award-winning mine reclamation project was the construction of an 18-hole golf course in the town of North Hempstead, Long Island. This mine was an abandoned sand and gravel operation prior to being put back into a productive use. Today, golf enthusiasts putter around in small golf carts on lands where giant machinery once reigned.

Are you familiar with the Vietnam Veterans Memorial in Washington D.C.? The same architect who designed that popular, national monument also collaborated on the reclamation of a mine in the Hudson River Valley. Maya Lin was contracted by the Storm King Art Center to reclaim a former sand and gravel mine into an earthform sculpture. With material, time, and equipment donations from local mining and horse stable operations, the site was transformed into the Storm King Wavefield—seven rows of undulating landforms create a sea of green grass that resemble ocean waves. You can almost hear the crashing sounds of surf on a beach! To promote the environmental aspect of this reclamation project, the artist kept track of all fuel used at the site, including fuel used to transport materials to the site, and planted enough trees to offset the carbon footprint of creating the artwork.

A former sand and gravel mine is now home to an 18-hole championship course at the Harbor Links Golf Course in the town of North Hempstead, Long Island.

Thalle Industries Inc., located in the Hudson River Valley, was the winner of a 2018 National Association of State Land Reclamationists award. Thalle's mine is still active, but it undergoes concurrent reclamation (reclamation that occurs alongside mining activities).

DEC encourages concurrent reclamation to help reduce erosion and environmental impacts that could otherwise result if lands affected by mining activities are not stabilized through revegetation. In addition to the environmental benefits of concurrent reclamation, the reclamation financial security could potentially be reduced, which provides

Hauser Gravel Bank

TOWN OF CALLICOON, SULLIVAN COUNTY

RECLAIMED SUMMER OF 2017

The Hauser Gravel Bank was a 14-acre gravel mine located in the town of Callicoon, Sullivan County. DEC suspended the mining permit during the spring of 2012 due to the permittee's failure to pay annual regulatory program fees. The permittee also failed to reclaim the site. DEC seized the financial security and reclaimed the site with the seized funds.

DEC's contractor graded and contoured the site using earthen materials located in several small stockpiles. This initial earthwork ensured the establishment of proper grades and slopes. Since there was an insufficient amount of soil at the site to complete reclamation, the contractor brought in topsoil and distributed it evenly across the site. This soil provided a rich and stable medium for future vegetative growth. The final reclamation of the site included two ponds totaling eight acres surrounded by six acres of vegetated slopes.

Renowned architect Maya Lin designed the Storm King Wavefield for an 11-acre gravel pit reclamation project in the Hudson Valley. The design reflects the Hudson Valley art center's mission of bringing nature and sculpture into harmony.

"The ability to shape the land, enhance the soils, and choose the specific vegetation types offers endless opportunities to support the local biosystem and agricultural needs."

an incentive for the mine operator to not wait until the mine is depleted of material to begin reclamation.

While not all mine reclamation projects win awards, many sites are returned to valuable wildlife habitat or cropland. The ability to shape the land, enhance the soils, and choose the specific vegetation types offers endless opportunities to support the local biosystem and agricultural needs. Some endangered and threatened species only live in areas that have certain vegetation, and planting it on these large land expanses helps to quickly develop suitable habitat that can sustain these species.

DEC also uses seized financial security funds to perform reclamation activities throughout the state as part of the Abandoned Mine Reclamation Initiative. These lands would have remained barren and unproductive had DEC not established the financial security requirements to allow for their eventual stabilization and reclamation. Over the last two years, DEC has successfully reclaimed ten abandoned mines, with several more planned for this year.

A lot of time, effort, and money are spent to transform mined lands from an "eyesore" to an asset. So, while you're enjoying your summer picnic in a park, eating your second ear of corn, or preparing to play a round of golf or snag that elusive fish from the depths of the nearby lake, it's possible you are benefitting from the reclamation of a former mine. And if you can't tell, that's a sign of a successful reclamation project.

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Moran Gravel Mine

TOWN OF PORTVILLE, CATTARAUGUS COUNTY

RECLAIMED SUMMER OF 2018

The Moran Gravel Mine was a 2.5-acre abandoned gravel mine located in a rural farming community in Cattaraugus County. The permittee voluntarily surrendered the mining permit, but then abandoned the site without performing the required reclamation. DEC seized the financial security and Division of Operations staff performed the required reclamation work.

DEC used several subsoil and topsoil stockpiles left around the perimeter of the site to reclaim the mine. Operations staff graded and contoured the mine faces to produce gently rolling surfaces with stable slopes that minimized health and safety risks, and returned the site to its former use as productive farmland. They also evenly distributed topsoil stockpiles across the site and seeded and mulched the area to minimize erosion and sedimentation during heavy rains. The Division of Mineral Resources approved the final reclamation of the site after its inspections found the revegetation was successful through a second growing season.