



CAPE COD AGGREGATES CORP.
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Cape Cod Aggregates Freetown Operation

Overview: Cape Cod Aggregates (CCA) is a family-owned and operated business, serving southeastern Massachusetts for fifty-five years. CCA today has six locations, and is the leading sand supplier in eastern Massachusetts.

In 2007, CCA acquired its Freetown site on Bryant Street, a sand and gravel operation since the 1970s. In October, 2007, CCA received a permit from the Town of Freetown Soil Conservation Board for a 24-acre quarry operation. As part of the permit the Soil Conservation Board and the Town routinely perform inspections of the site.

Aggregates are the basic building blocks of the construction industry. Aggregates are used, among other things, to build schools, roads, hospitals, homes, railroads and golf courses.

Site Improvements: Upon acquiring the parcel, CCA spent more than a year, at a considerable investment, reorganizing and improving the site in the following ways:

- Dismantled old plant, installed modernized facility
- Extensive site work that included redesigned and newly constructed industrial water settling ponds for recycling of water used in CCA's daily operations.
- Designed and constructed a comprehensive storm water management system, and developed a certified Storm Water Pollution Protection Plan (SWPPP)
- Installed eight bedrock monitoring wells
- Renovated the site office and garage
- Re-vegetated about 12 acres on site
- Constructed vegetated earth berms for visual, noise and dust screens
- Permitted and constructed Quarry Drive, a newly paved quarry entrance with fencing and landscaping—a site improvement.
- Fenced-in majority of site perimeter

- Designed and constructed state-of-the-art aggregate processing plant with specialized rubber screens to assist with noise reduction
- Installed a dust suppression system and additional noise barriers
- Designed and installed modern truck tire wash for trucks exiting site.

Quarry Blasting Protections/Mitigations: The aggregates industry is one of the most highly regulated and monitored industries in the United States. CCA is required to meet all U.S. Department of Labor MSHA (Mine Safety Health Administration) standards. CCA is in full compliance with all federal, state and local regulations.

Cape Cod Aggregates is committed to protecting well water, minimizing noise, controlling dust, and maintaining the quality of life in the communities we serve. We employ best management practices in our daily operations, and comply with or exceed the requirements of state regulations to protect neighboring areas from disturbances during blasting. The State of Massachusetts has adopted rigorous state regulations codified in 527 CMR 13.00, mandating “allowable limits of air blast and vibration.” These regulations are “based upon extensive government, university, and engineering research which has established the amount and character of vibration so as to prevent and insure the safety of the public and the protection of property adjacent to the blast area.” 527 CMR 13.09.

More specifically:

- **Blasting at CCA’s Freetown facility is contracted to a licensed blasting company and independently monitored and on average consistently measures at least 80 percent below allowable levels or better.**
- CCA hired, in 2008, A1 Drilling and Blasting of Milford to develop and implement a blasting plan for its Freetown site that utilizes the most advanced industry technologies in drilling and blasting. **A1 has implemented a blasting plan that was approved by and filed with Freetown Fire Chief, who closely supervises/regulates CCA blasting. In 2012, A1 further refined and improved their blast plan by adding Bore Tracking and 3-D Modeling to improve the accuracy and safety of the blasting being conducted at the Freetown site.**
- Section 527 CMR 13.09 also details the requirements for Pre-Blast Surveys. Under the requirements, the blasting company, by law, must offer and pay for a pre-blast survey to any owner of a structure that falls within 250 feet of the nearest borehole. CCA has paid the cost of these surveys, conducted in 2008-2009. The information gathered was made available only to the insurance company performing the inspection and to the homeowners themselves.
- In an effort to do more than the regulations require to assess neighboring impact, Cape Cod Aggregates asked the blasting company to extend the range of the pre-blast survey out to about 2,000 feet—eight times the required distance—in an

effort to provide greater peace of mind for neighboring areas and as a commitment to our on-going community commitment.

- A blast survey provides the homeowner with a baseline condition report of their property. This is an important component in the collection of data used in determining if any damage has been caused to property that lies within measured proximity of the quarry. The program was established by the Commonwealth of Massachusetts for the protection of the homeowner.
- State regulation mandates a process for reporting damage through an official blast damage complaint form. **To date, there have been no substantiated claims.**
- While state regulations require two independently examined seismographic monitors for each blast, A1's blasting plan utilizes four seismographic monitors for every blast—twice as many monitors as required by law.
- A1 and/or CCA have always responded to neighbor requests to relocate monitors and place them at requested locations.
- CCA has established a neighborhood call-sheet to alert residents in advance of scheduled blasts. We've added to the list upon request, and continue to do so. At present, there are 45 neighbor notifications on the list—38 receive calls as requested, seven are e-mailed as requested, some receive both.
- In addition, CCA alerts Freetown selectmen, the Town Administrator, and both the Freetown and Berkley police Departments in advance of all blasts in a collective, on-going effort of cooperation and close communication.
- CCA continues its documented, comprehensive neighborhood outreach plan, responding to questions and concerns. We pledge to continue those efforts.

A1 Quarry Blasting Checklist:

A1 Drilling and Blasting employs the most advanced methods and industry technologies related to blasting and blasting procedures to minimize impacts on surrounding neighborhoods. For each blast, the blaster insures compliance with the following:

- Confirms Dig Safe information
- Secures blasting permit at Freetown Fire Department (currently valid for 30 days)
- Completes Pre-Blast Plan Sheet and faxes to town officials
- Provides at least 24-hour notice of blasting to Freetown Police and Fire Departments
- On day of blast, the shot is carefully loaded, using most advanced industry technologies to insure safety and mitigate noise and vibration impacts.
- Seismographs are set up by independent monitoring company
- Blast area is cleared under supervision of Freetown Fire Chief, guards are posted at quarry entry points

- Warning horn is sounded with three long horns, five minutes before the blast detonates
- Security of blast area is confirmed
- Warning horn is sounded again with two short horns one minute before blast detonates
- Blast is detonated
- The blast lasts less than one second??
- Blast area is checked again
- One horn is sounded to signify the “All Clear”
- Seismographs are retrieved by the independent monitoring company for data collection
- Blast paper work is completed in accordance with state regulation
- Copies of blast report and seismic report are distributed and kept on record with the Freetown Fire Department, as well as by the blasting company and CCA.
- **CCA reports the results of the blasting and seismic readings, as well as the location within the quarry of every blast, in a detailed Quarterly Report to the Soil Conservation Board as part of the conditions of our permit.**

Groundwater Protection: To closely monitor groundwater protections, CCA has retained Stephen W. Smith of GeoHydroCycle, Inc. of Newton, a professional engineer licensed through the American Institute of Hydrology, an expert on groundwater protection and modeling, and an adjunct instructor of groundwater modeling at the University of Massachusetts, Lowell.

- GeoHydroCycle is considered a regional authority on groundwater monitoring and modeling.
- GeoHydroCycle was hired to review CCA’s then existing groundwater monitoring program (circa 2008), and to insure that CCA was fully complying with all regulations and minimizing in every way possible impacts on the neighborhood, given documented, pre-existing Freetown groundwater conditions.
- In February, 2012, Mr. Smith presented CCA with a review of groundwater conditions both in and around the site with respect to water elevations and water quality. He also reviewed CCA’s groundwater monitoring plan that was in place at the time.
- In 2012, CCA implemented an enhanced water monitoring program based on GeoHydroCycle’s recommendations and analysis of CCA operations and surrounding groundwater conditions.
- Early on in 2009, seven bedrock groundwater monitoring wells were installed and sampled. In 2012, CCA had to remove one well because its location was within the area of excavation, but in following the recommendation of GeoHydroCycle, CCA installed two additional wells for testing. Combined with an existing well

that was already on site, CCA has performed testing on nine different wells on site.

- From 2009 through 2012, groundwater levels were measured and monitored by hand.
- In the summer of 2012, as part of the recommended enhanced water monitoring program, GeoHydroCycle installed transducers in eight on-site wells, to electronically monitor and provide data collection relating to groundwater elevations, the results of which are reported to the Freetown Soil Conservation Board and the Board of Health Agent.
- Additionally, in 2012, GeoHydroCycle began quarterly and annual water quality testing on various wells based upon the testing schedule proposed to the Soil Conservation Board as part of CCA's site specific permit conditions. These results are also reported both quarterly and annually to the Soil Conservation Board and the Freetown BOH.
- In 2012 the MA department of Environmental Protection (DEP) received a call alleging that CCA was polluting neighboring wells with perchlorate. CCA was notified by the DEP that they were going to conduct an investigation and that they would like access to our monitoring wells.
- CCA cooperated willingly with the DEP providing full access to: our site, our wells, all reports and data that had been collected over the years, MSDS sheets, blasting reports, and any and all data and information they requested.
- Additionally, the DEP tested a significant number of private residential wells in the surrounding area.
- They have still not issued a written report but they did make a presentation to the Freetown Board of Selectmen, the Soil Conservation Board and members of the Board of Health stating that CCA had not polluted, discharged or impacted any private wells in the area and that CCA was conducting its activities in a highly responsible and appropriate manner.
- In April 2013, CCA and the Soil Conservation Board negotiated and agreed upon site specific conditions to be included as part of our Soil Conservation Permit. One of these additional conditions was that we look at the potential impacts of blasting on neighborhood wells, with a particular focus on the issue of sedimentation.
- GeoHydroCycle created a Residential Sedimentation Testing Plan and submitted the plan to the Soil Conservation Board and the Board of Health Agent for review and comment as to the scope and methodology of the testing. The plan was given approval in April by the BOH Agent to proceed and shortly thereafter by the Soil Conservation Board.

- In August 2013 GeoHydroCycle mailed, via Certified Mail, invitations to 12 homes surrounding the quarry, in both Freetown and Berkley, and mostly to neighbors who had complained or expressed concerns about sedimentation in their wells asking them to participate in a study, at no expense to them.
- In September 2013, a second round of letters went out again inviting residents to participate in the sedimentation testing, but only four residents choose to participate. In fact, some of the most vocal neighbors with regard to our operations choose NOT to participate in a study created to examine an issue that they asked the Soil Conservation Board to investigate.
- The Sedimentation Testing was performed in November 2013 and the report was completed December 10, 2013 and the results presented to the Soil Conservation Board and the Board of Health Agent.
- The results indicated that water quality and flow rates actually *improved* immediately following a blast, dispelling the notion that blasting was negatively impacting neighboring residential wells.

Environmental Survey and Sound Assessment

- In 2013 CCA conducted a detailed Environmental Survey and Sound Assessment. This study took a comprehensive look at each piece of equipment as well as the stone processing plant to determine if any individual or if collectively CCA was violating the DEP or industry standards.
- The study determined that CCA's Freetown facility and operations are operating in full compliance with DEP standards.

CCA payments to Freetown to date:

- \$314,000+ in tipping fees
- \$210,000+ in property tax revenues
- \$72,000+ in personal property tax
- \$12,000+ in permit fees
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CCA Contributions to Freetown to date:

- Annual sponsorship/contributions to Town of Freetown July 4th Fireworks Display
- Regular contributions to Freetown recreation programs, community organizations and other groups for the benefit of the town
- Participating with Freetown Cemetery Committee and Berkley Historical Society to clean and maintain a cemetery site adjacent to the property.