

THE AUSTIN ADVANTAGE

CATSKILL NY QUARRY
LOADS & BLASTS
208,412 TONS IN A
SINGLE DAY



GENERAL INFORMATION

Location: Catskill NY Quarry

Project Type: Surface Limestone

Products Used: Eagle 450 E*STAR Booster, Eagle 900 E*STAR Booster, 150' E*STAR Detonator HD, 120' E*STAR Detonator HD, 40' E*STAR Detonator QM, Heet 40 Bulk, Hydromite 4400 Bulk, Hydromite 820 5 ½ x 40 WPP stk

Lead Blaster & Author: Nicolas Kitsock, Senior Blaster

Lead Technical Service Representative: Patrick Todey, North East Technical Rep

THE HISTORY

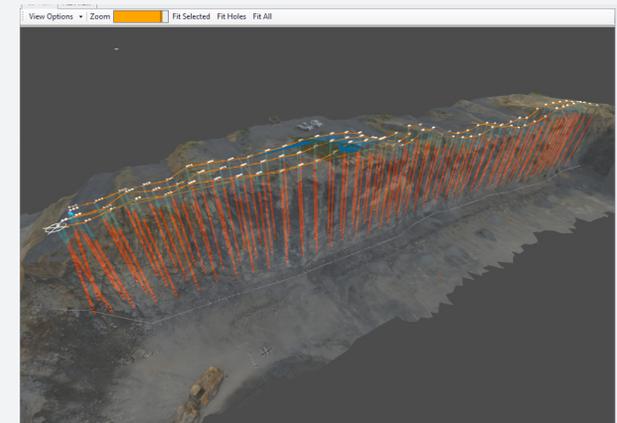
The Peckham Catskill Quarry has been used since the early 1900s and was once owned by Holcim Cement. Peckham leased the property from Holcim from the early 1990s until 2013, when they fully acquired the land.

Since the creation of this high wall, the Austin team of blasters had always blasted it in two shots (East side/West Side) due to its sheer size and height, with each shot producing around 100,000 tons. This past spring, the customer asked if it would be possible to shoot it all in one shot to cut down on oversize and eliminate potentially dangerous high wall conditions.

After careful review, the Austin Powder teams determined this was possible, and they committed to the project.

THE GOALS

1. Increase blast size
2. Increase crusher throughput
3. Decrease oversize
4. Improve fragmentation



3D View



Overhead View

CUSTOMER CHALLENGE

The first challenge was creating a blast layout with straight rows on this 700-foot-long bench with extremely difficult terrain. There was nowhere on the shot where you could stand and see from one side to the other.

The second challenge was the time window. Since the face needed to be “muck free” for optimal blast design, the quarry had to mine elsewhere. So, an additional 75,000 tons were shot in another part of the quarry, which gave the blasters a three-week window to complete this project,

The blast day logistics were also challenging as many moving parts needed to run smoothly to prevent a missed shot time by 5 pm. On the day of the blast, five crews, each with a blaster, driver, and laborer, arrived at 5:45 am. They all needed to be on the shot at once, loading holes, and as soon as the first two trucks were empty, they returned to the nearby Austin plant to reload the bulk product.

Nicolas Kitsock, the Lead Blaster on the project, said the greatest challenge they faced was directly related to overseeing five shot crews simultaneously, “I had to figure out how to give five blasters the pre-calculated hole loads which factored in face profiles and overburdens off the drill logs when marking paint at the hole was not an option due to the number of cuttings on the surface which remained dry due to no rain.”

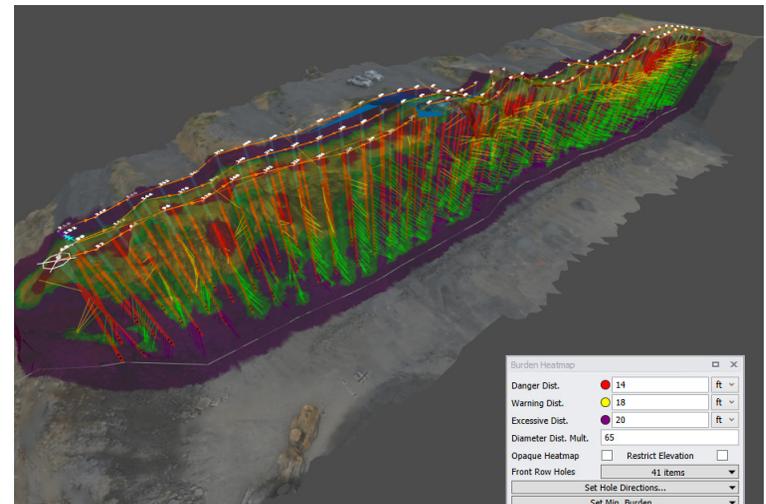
THE AUSTIN SOLUTION

The Austin Technical Experts flew a drone to evaluate the face and bench and modeled the shot using Paradigm software. The software was also used to generate all 3D profiles, hole depths, and fixed per hole timing based on distance.

Using the data generated by Paradigm, a front row was added with optimal face burdens, followed by a second and third row based on the customer’s preferred pattern. The team then sent the 103 holes designed in Paradigm back to the Emlid GPS. The next day they “staked out” the holes with the rover, and within an hour, they had completed the optimal layout - without taking any physical measurements on the bench.



Day of Blast - Morning Arrival



Burden Heat Map

THE **AUSTIN** SOLUTION - CONTINUED

The three-week window to drill and shoot was accomplished, in part, because the entire shot was drilled by Austin Powder company-owned drills. An Atlas Copco D60 split the drilling with a Sandvik 550 drilling over 9,000 drill feet. Measures were taken in the weeks before to allow the drills to arrive the day the shot was laid out.

The last challenge of giving the blasters good hole load data as they leapfrogged around the shot was solved by subdividing the shot into four areas, each containing around 25-30 holes. Each Blaster received a hole load chart for all four areas on the shot. The four shot areas were also marked on the bench by painting dividing lines so at any time, a blaster could reference where he was on the shot.

THE **OUTCOME**

With careful logistical planning, Austin Technical Services expertise, and plenty of help, the Austin blasters were able to shoot ahead of schedule at 3:30 pm. 130,000 lbs of explosive product were loaded and shot in a single day, producing 208,412 tons of material.

Nicolas Kitsock said, "The customer was extremely pleased with the end result and couldn't thank Austin Powder enough for their time, dedication, and precision execution in pulling off this monster shot without any problems or delays."



Before the Blast



After the Blast



AUSTIN POWDER