

Application Technology—3D Blast Modeling



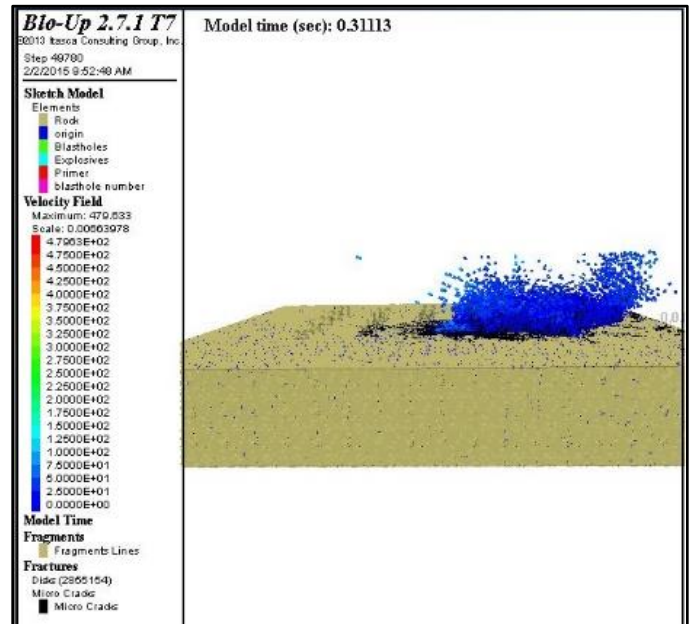
Project Summary

CURRENT SITUATION

Waste rock was needed to re-establish haul roads for an Iron Mine in the Midwest USA. This was an existing mine being reopened. In order to obtain the materials needed for the haul roads the customer selected a green site. This site was located within 200ft (5m) of an existing lake.

Before any blasting took place the Department of Natural Resources for the state determined no material from the blast could enter the lake. Since this was a green site there was no experience on how to shoot this material or information on how much movement or flyrock could be expected employing 16in (41cm) diameter holes.

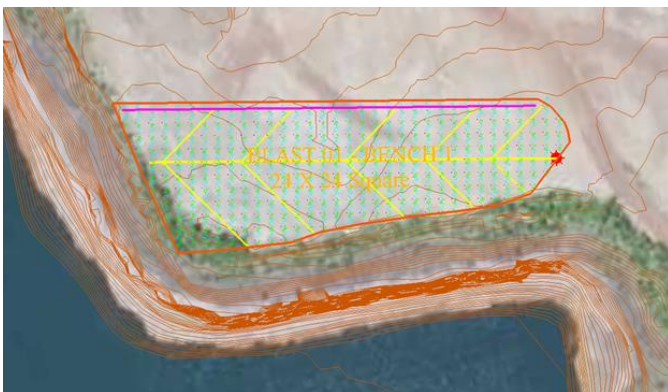
The local Dyno Nobel Technical Representative produced a blast pattern he was confident would control the flyrock off the shot. Other blast patterns were also presented, so an application needed to be applied to see which blast pattern would best control flyrock.



Technology Applied

APPLICATION OF THE HSBM 3D BLAST MODEL

The HSBM 3D Blast Model was employed to determine how the various blast patterns proposed for this task would perform in the field. The trajectory and velocity of the rock fragments ejected from the surface of the blast were the primary importance. Obtaining the most accurate mechanical strength properties of the rock to be blasted was pertinent for the creations of the model.



Value Added

MODEL ANALYSIS RESULTED IN EFFICIENT BLAST PATTERN

The results of the HSBM 3D Blast Model analysis showed the blast pattern proposed by the Dyno Nobel Technical Representative would allow no fly to leave the blast area. Based on the results of the blast modeling the blast pattern was employed in the field. As predicted by the HSBM 3D Blast Model analysis no flyrock entered the lake and no material left the blast site.

Due to the successful results from the blast, this analysis system has proven effective for first time shots or when there is some debate on which blast pattern to employ.



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