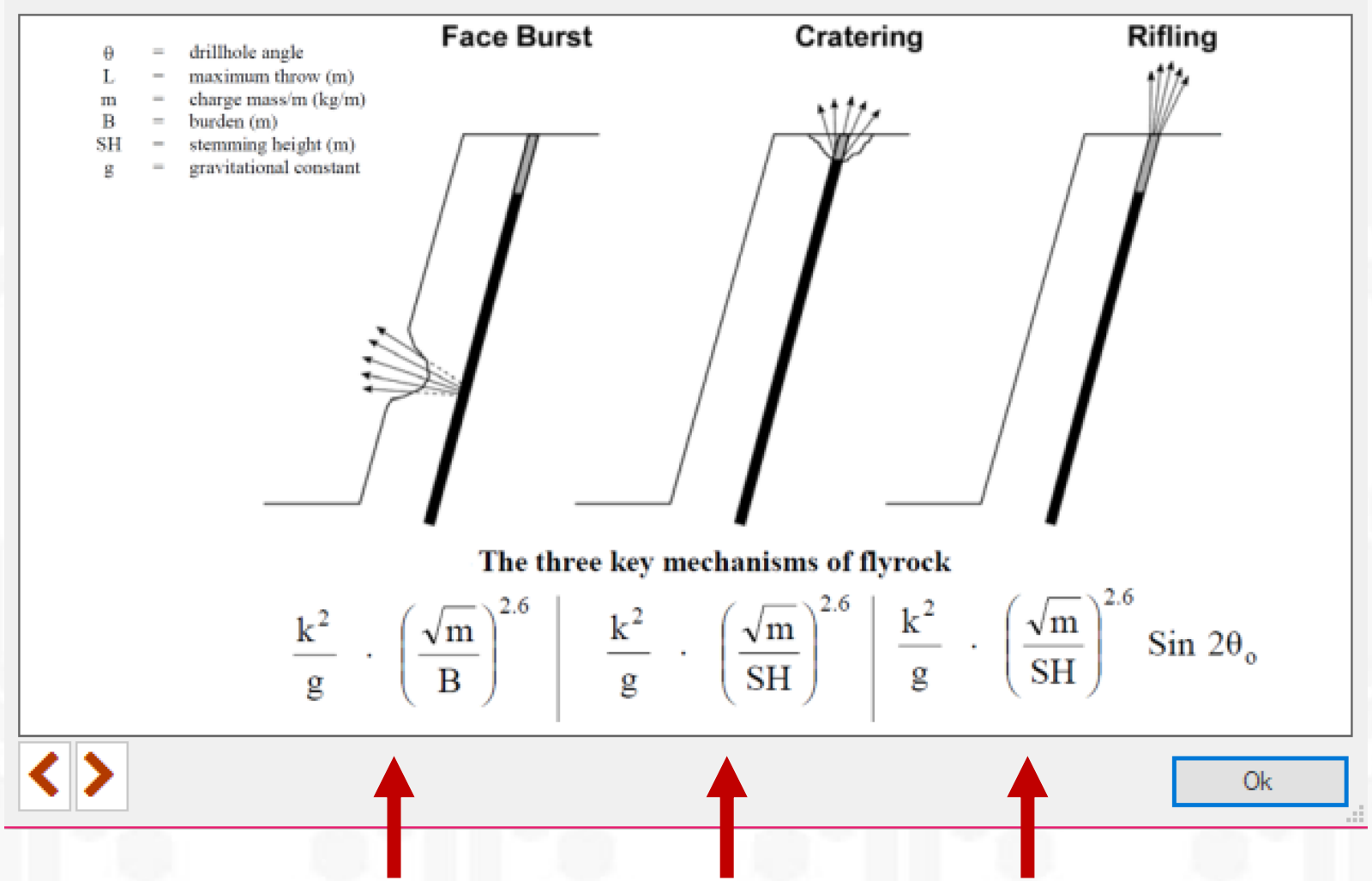
Flyrock model manual

Instructions: models for flyrock

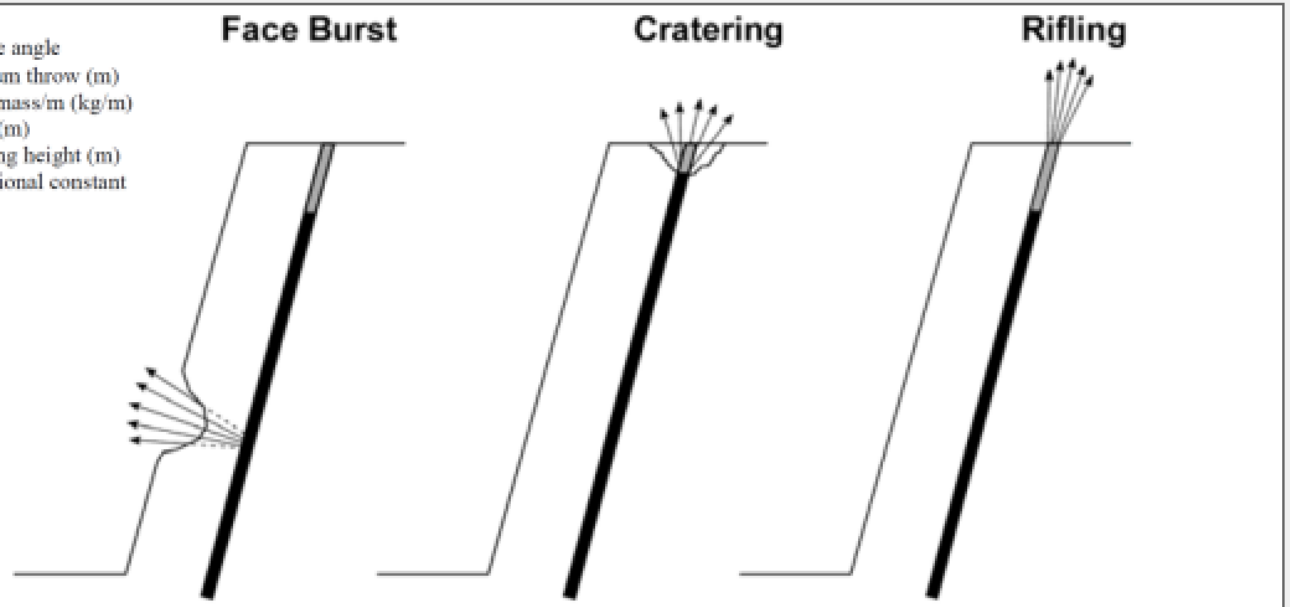


O-Pitblast uses three different mechanisms to predict the radius of the clearance zone.

1st model

Instructions

θ = drillhole angle
L = maximum throw (m)
m = charge mass/m (kg/m)
B = burden (m)
SH = stemming height (m)
g = gravitational constant



The three key mechanisms of flyrock

$$\frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{B}\right)^{2.6} \quad \left| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \right. \quad \left| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \right. \text{Sin } 2\theta_o$$

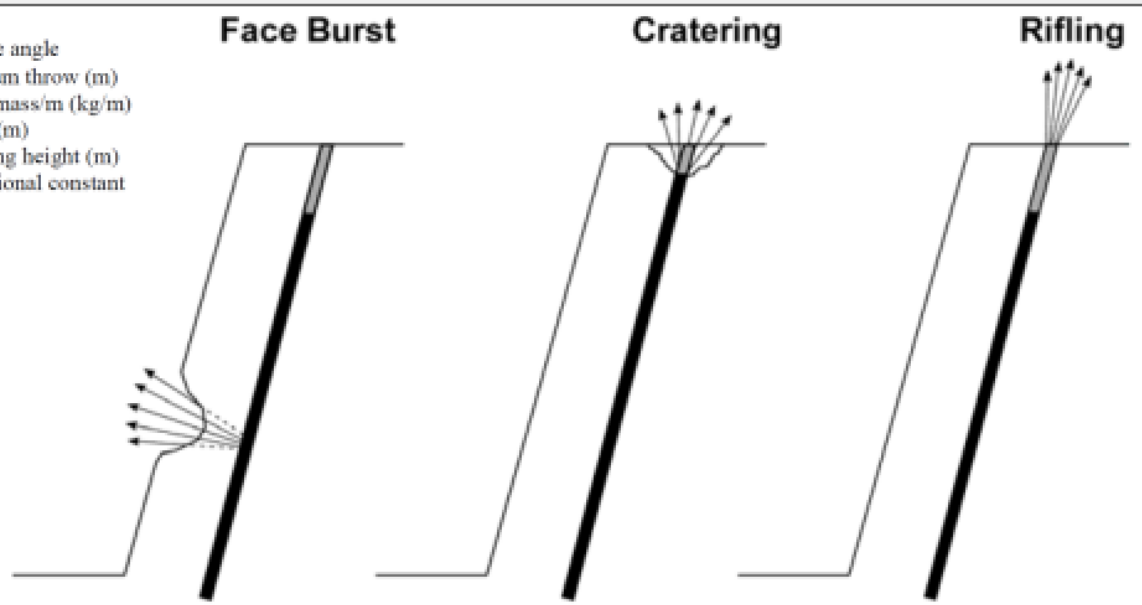
Ok

Based on face burst (burden)

2nd model

Instructions

θ = drillhole angle
L = maximum throw (m)
m = charge mass/m (kg/m)
B = burden (m)
SH = stemming height (m)
g = gravitational constant



The three key mechanisms of flyrock

$$\frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{B}\right)^{2.6} \quad \left| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \right| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \text{Sin } 2\theta_o$$

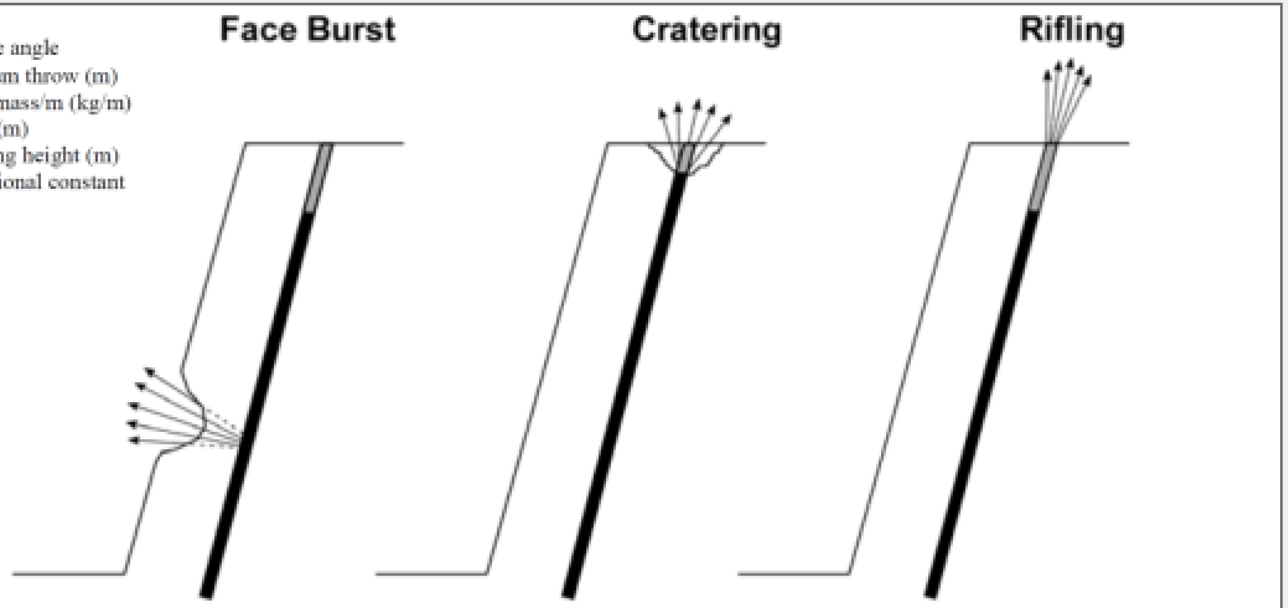
Ok

Based on stemming height

3rd model

Instructions

θ = drillhole angle
L = maximum throw (m)
m = charge mass/m (kg/m)
B = burden (m)
SH = stemming height (m)
g = gravitational constant



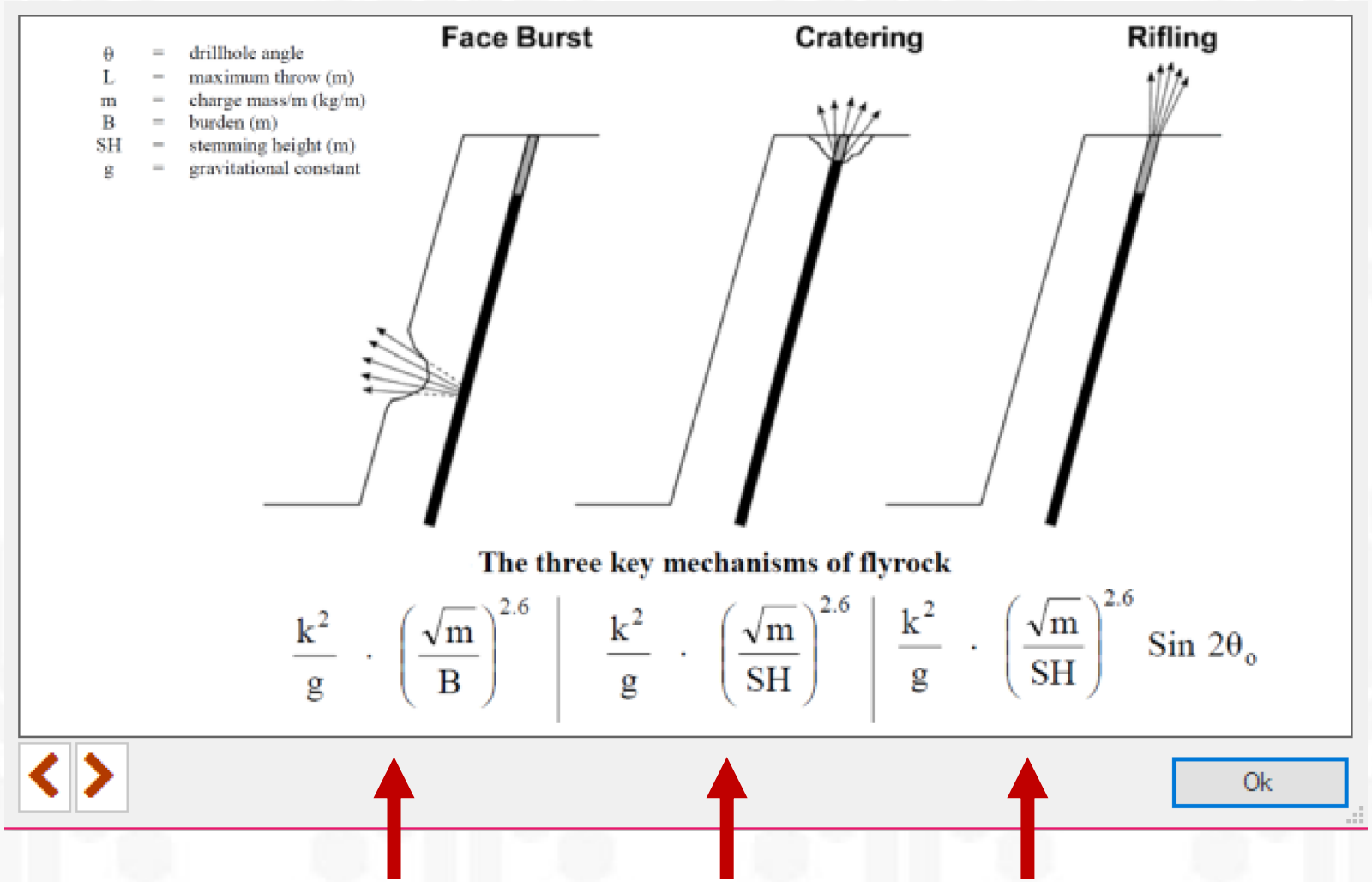
The three key mechanisms of flyrock

$$\frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{B}\right)^{2.6} \quad \left| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \right| \quad \frac{k^2}{g} \cdot \left(\frac{\sqrt{m}}{SH}\right)^{2.6} \text{Sin } 2\theta_o$$

Ok

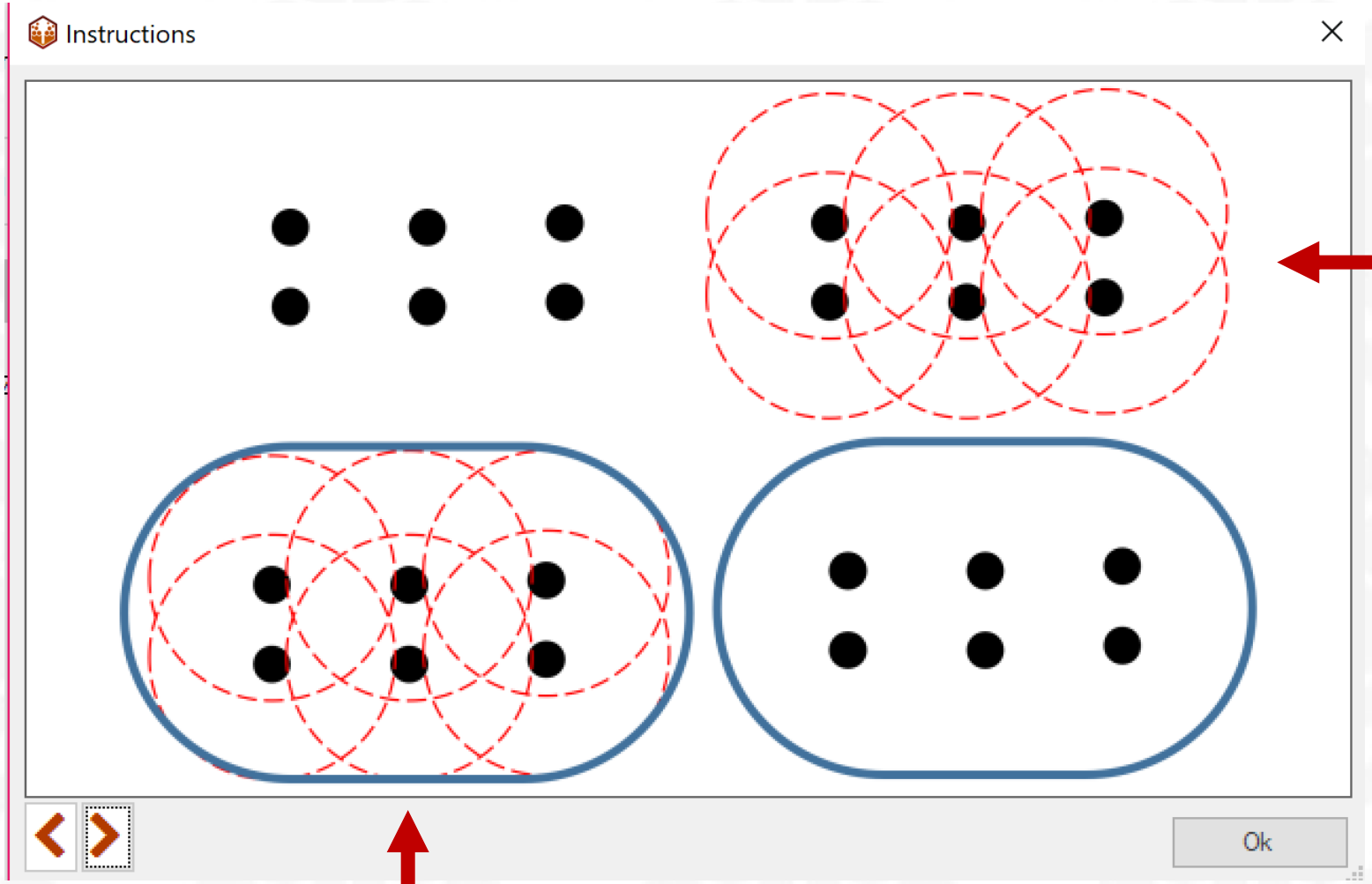
Based on hole inclination and stemming height.

Choosing critical value from the 3 models



O-Pitblast calculates the radius for all models and gets the critical value (the highest one).

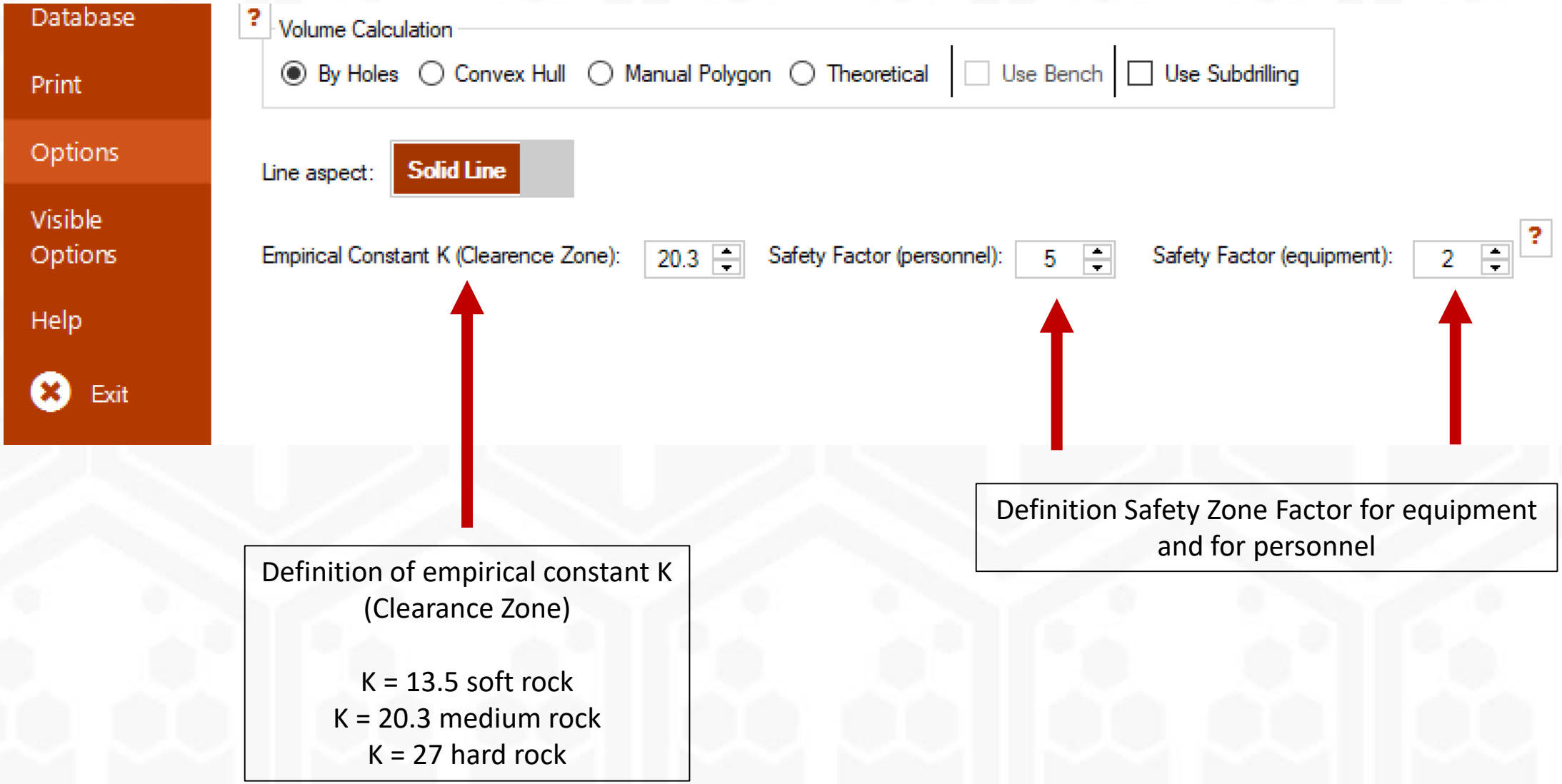
Polygon area



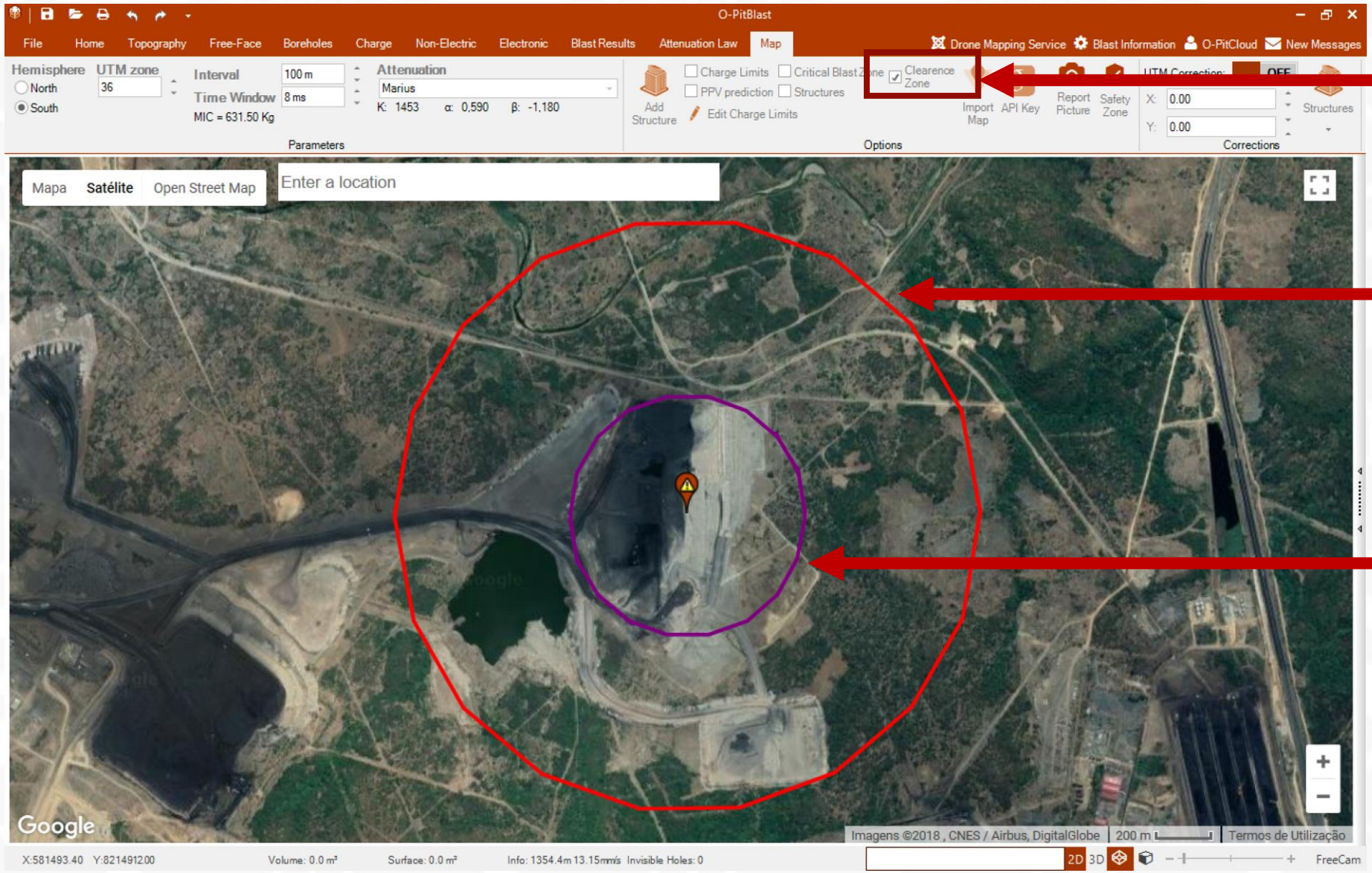
Based on the highest radius, from the models above, O-Pitblast creates in each hole a circle with that radius.

And finally, a bigger polygon is created based on every hole radius.

Define your parameters



Clearance zone: Map Module



Selection of Clearance Zone

Clearance area for personnel

Clearance area for equipment