SMART BLASTING APP TRAINING MANUAL

Contents

- 2

INTRODUCTION : 3

EXECUTIVE SUMMARY 3

OPENING THE APP: 3

DASHBOARD: 4

CONTENTS OF THE DASHBOARD: 6

- BLASTING PREDICTORS 7

1. AIR VIBRATION PREDICTOR 7

2. FRAGMENTATION PREDICTOR 8

3. GROUND VIBRATION PREDICTOR 11

4. BLAST CLEARANCE ESTIMATOR 12

5. MAP: 14

- BLAST DATA QA/QC 15

1. BLAST INFO 19
2. DESIGN DETAILS 19
3. ROW DETAILS 20
4. INDIVIDUAL HOLE DETAIL 21
5. CAMERA 23
6. BLAST LOCATION 25
7. INITIATING DEVICE 26
8. ROCK 27

- BLAST PROCESSES 28
- BLAST DESIGNER 29

-

INTRODUCTION :

Smart blasting app is an Ios/Android based app for onsite data collection and predicton in offline mode. This data can further be synced with BIMS (blast information managemen system)this software is also powered by mineexllence.

EXECUTIVE SUMMARY:

-Captures differences from design in the field including comments
-Changes are visible to people in real time in the office (e.g. Water Logging etc)
-Access Blast Designs in the field (via designer or via a design document)
-Pre-blast and post-blast photographs / videos /GPS Location / Date time etc.
-Onsite Predictors
-Blast Approvals

OPENING THE APP:

You can download this app from google play store for free. Once you install the app in your android phone, this screen will be shown:

Figure 1 opening the smart blast app

DASHBOARD:

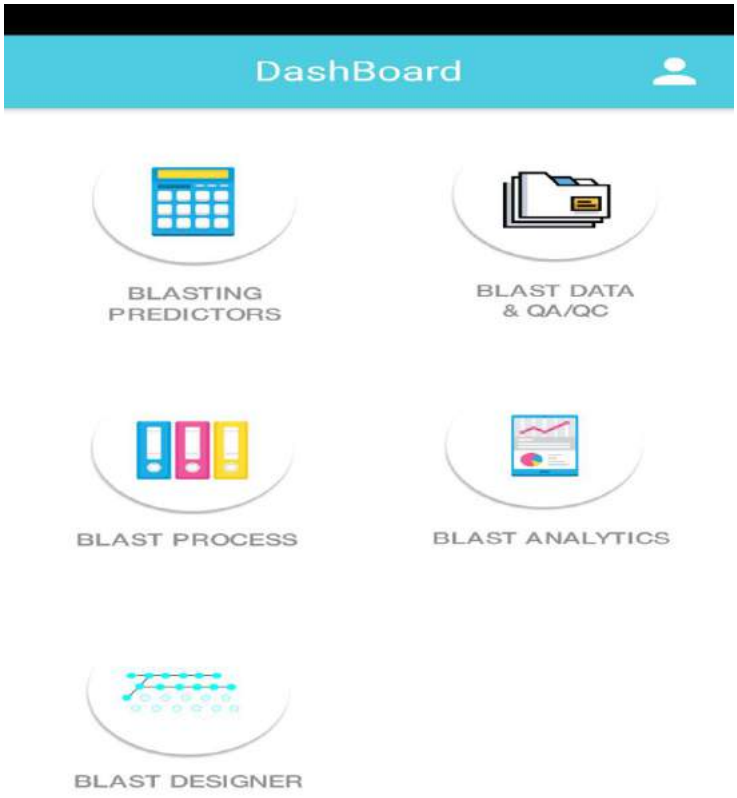


Figure 2 Dashboard of smart blast for login

**You can log into the smart blasting app only if you have credentials to login.

- For logging in click on this icon this will direct you to the login page asking for the following information:

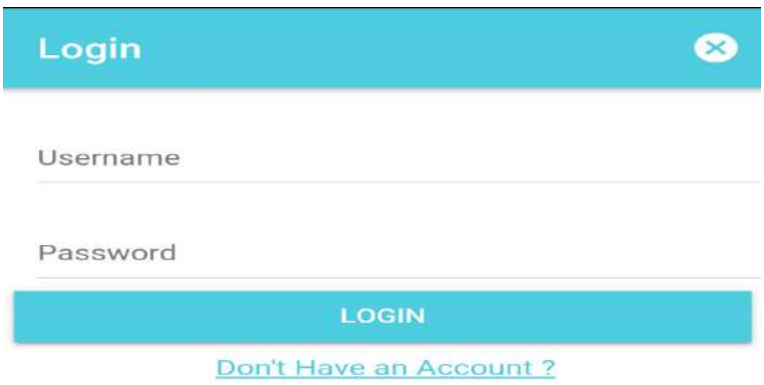
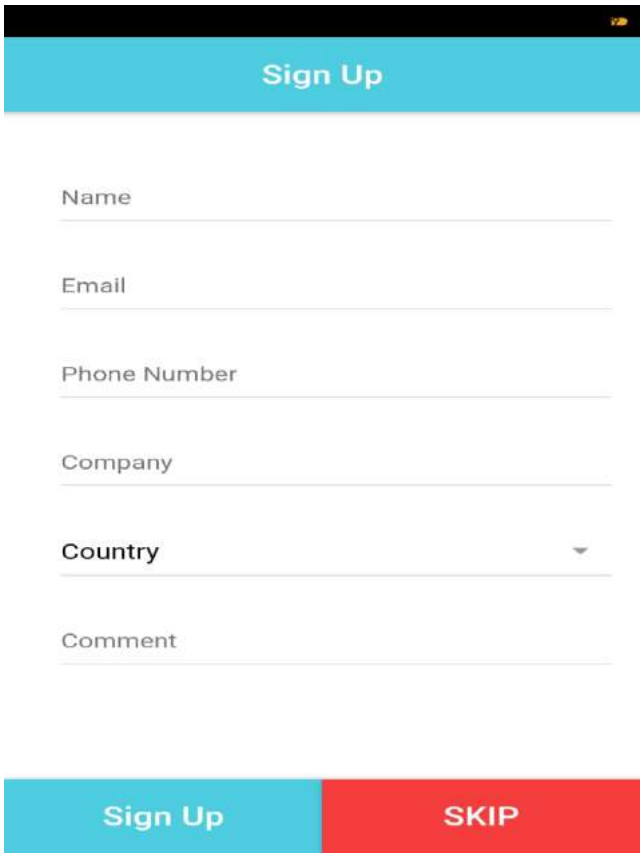


Figure 2: login page of Smart Blast App

1. If you don't have an account you can simply register yourself by clicking on don't have an account
   Don't Have an Account ? you will be shown as:



2. Fill the required field as directed then click on sign up Sign Up if you don't have the information you can skip this step by clicking on SKIP button on the screen.

CONTENTS OF THE DASHBOARD:

1

This module includes all the predictors in it like air blast, fragmentation, ground vibration and blast clearance estimation.

2

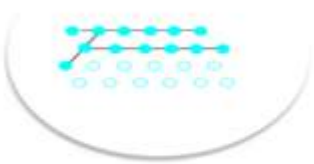
This module consist of all the information related to that particular blast as if you want to open some file and also avails quality assurance and quality control.

3

This module keeps the record of all the blast processes as if they are complete or not.

4

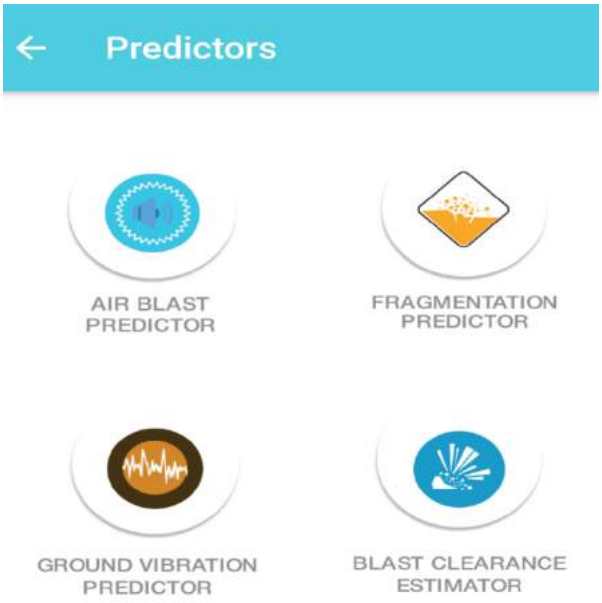
This module can be used for analysis of all the parameters of the blast by slightly altering them.

5 

This module gives a basic design of the blast and it keeps the record related to the blast design.

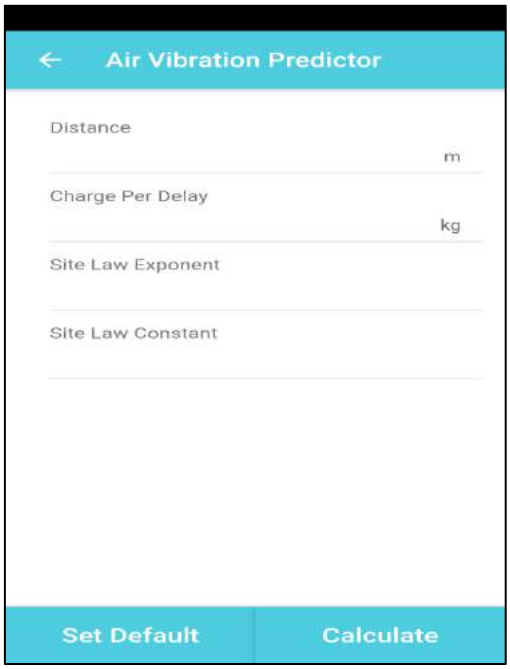
➢ BLASTING PREDICTORS

:

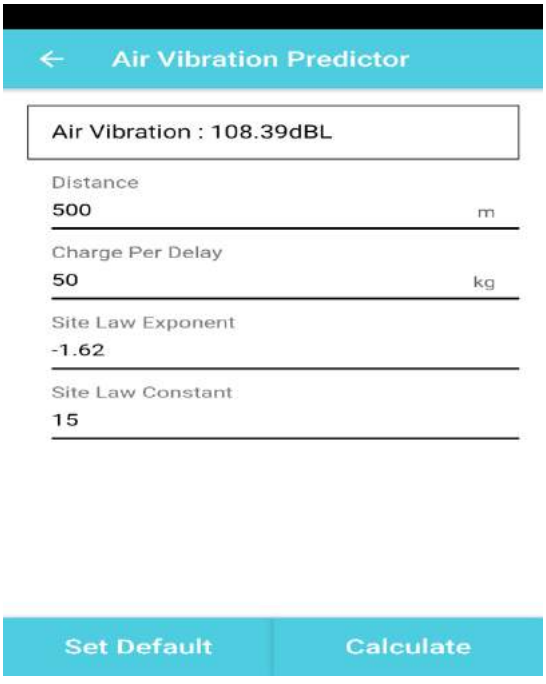


1. AIR VIBRATION PREDICTOR :

- This gives you the account of all the predictions related to the air vibration by asking the following parameters:



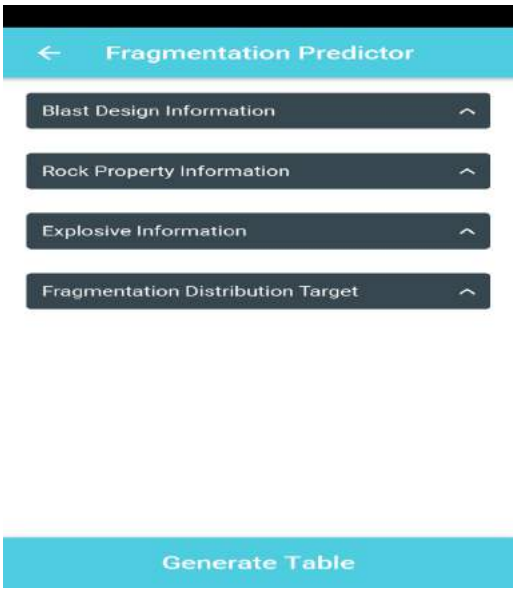
- If you don't have the values you can set the default values by clicking on **Set Default** set default and then click on **Calculate** button, this will be shown to your screen:



This is the calculated air vibration that has been predicted based on input data.

2. FRAGMENTATION PREDICTOR :

This can predict all the information related to the fragmentation based on the input parameters.



Step 1- fill all the required information in the following sections by clicking on this icon

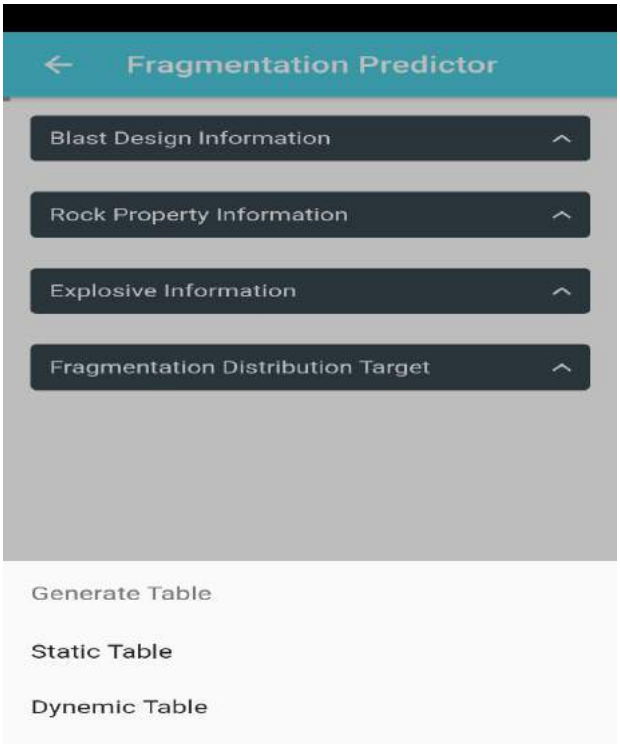
1. Blast design information
2. Rock property information
3. Explosive information
4. Fragmentaton distribution target

Step 2- you can also set the default values by clicking on this button Set Default .

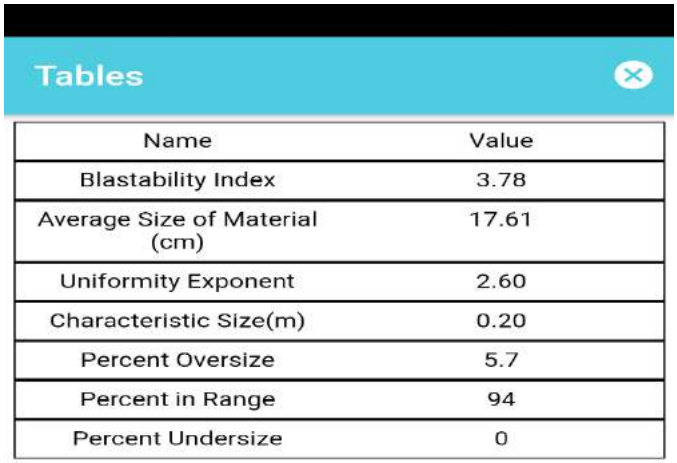
Step 3-after filling the values click on save button Save.

Step 4- click on generate table button Generate Table.

This will pop up on the screen



Static table: This will give a general overview of the fragmentation.



Name	Value
Blastability Index	3.78
Average Size of Material (cm)	17.61
Uniformity Exponent	2.60
Characteristic Size(m)	0.20
Percent Oversize	5.7
Percent in Range	94
Percent Undersize	0

Figure: static table with basic overview of fragmentation

Dynamic table: This gives a detailed information of the particle size and percentage passing and hence the fragmentation.

Tables

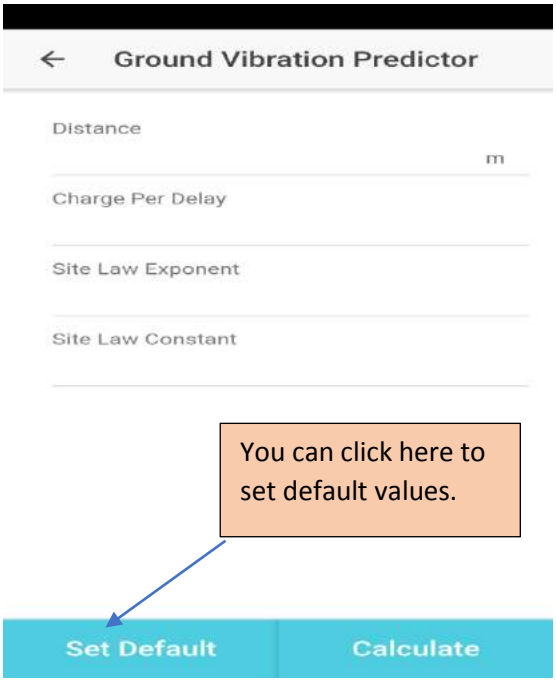
Size(m)	Percentage Passing(%)
0	0.0
0.5	100.0
1	100.0
1.5	100.0
2	100.0
2.5	100.0
3	100.0
3.5	100.0
4	100.0
4.5	100.0
5	100.0
5.5	100.0
6	100.0
6.5	100.0
7	100.0
7.5	100.0
8	100.0
8.5	100.0
9	100.0

Figure: dynamic table with detail description of fragmentation

3. GROUND VIBRATION PREDICTOR :

This gives the predictions related to the ground vibrations

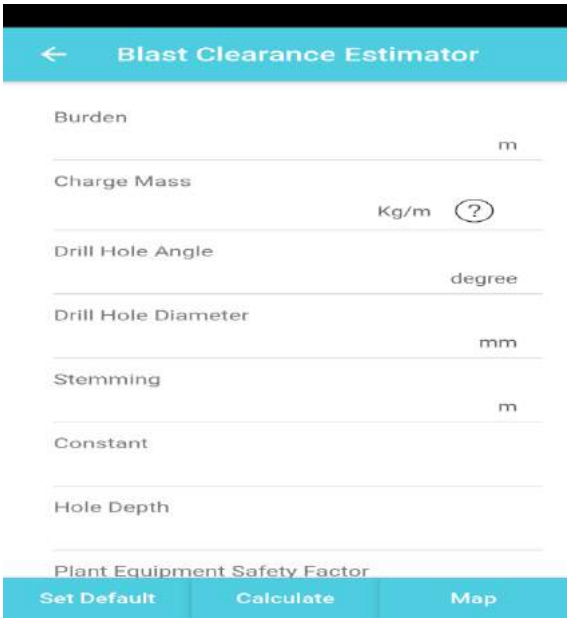
Step 1: fill all the information required if you don't have the values you can set the default values.



Step 2: Now click on calculate to get the following calculated output.

4. BLAST CLEARANCE ESTIMATOR :

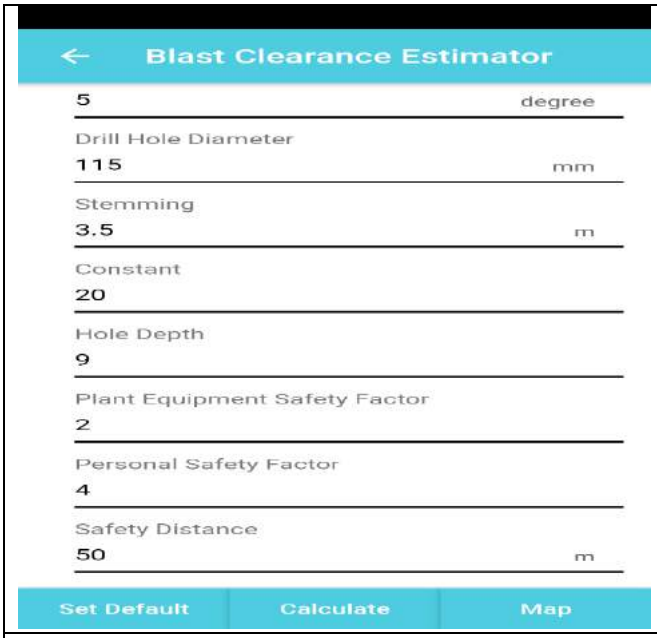
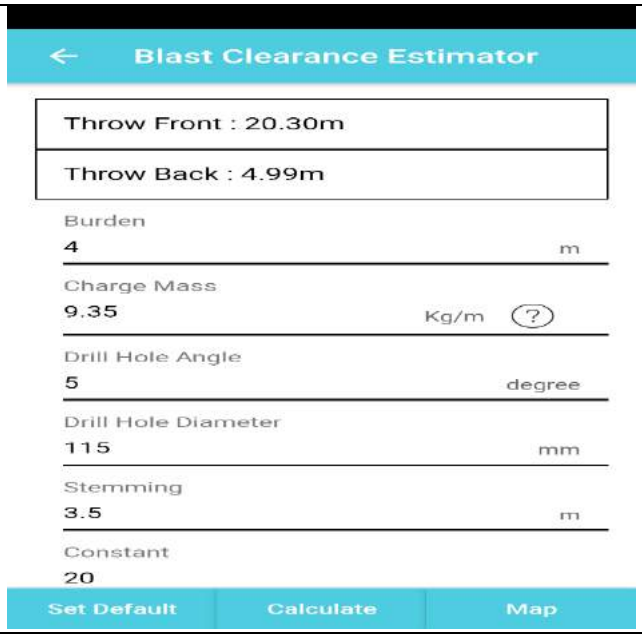
This gives the blast clearance distance up to which the blast is safe



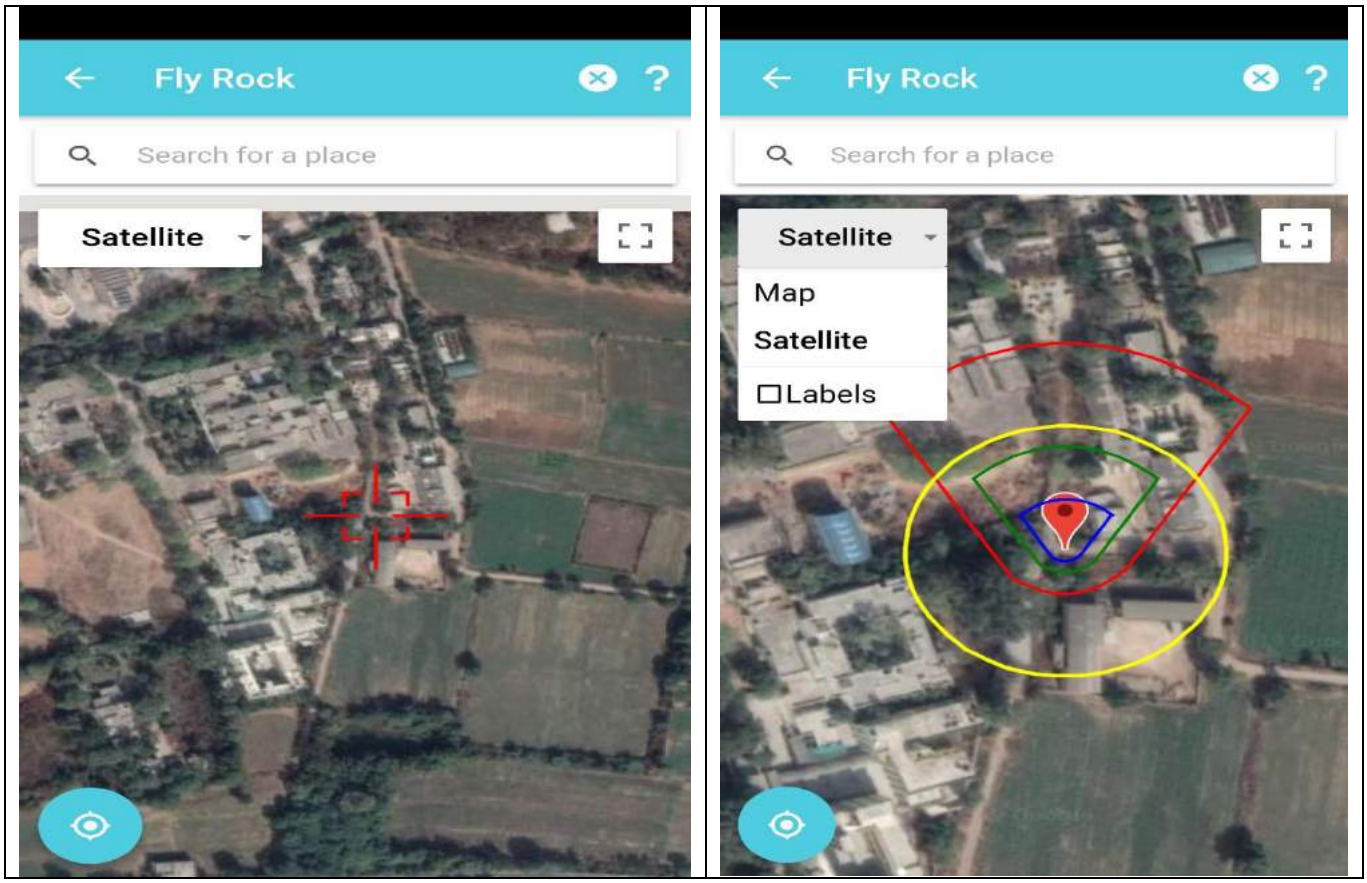
Set default Set Default **:** To fill the default values.

Calculate Calculate **:** To calculate the result/output.

Map Map **:** To locate the clearance distance on a map.

	
STEP1: SET DEFAULT	**STEP2:** CALCULATE

5. MAP:



S.NO.	ICON	USE OF THAT ICON
1		This icon is used for re-centring.
2		This is used for full page preview.
3		For any help, click on this icon.
4		Double-click on this icon to draw contours.
5		This helps in changing the different types of map you can select the terrain mode also.

- BLAST DATA QA/QC : on clicking this icon following screen will pop up then fill the required information.

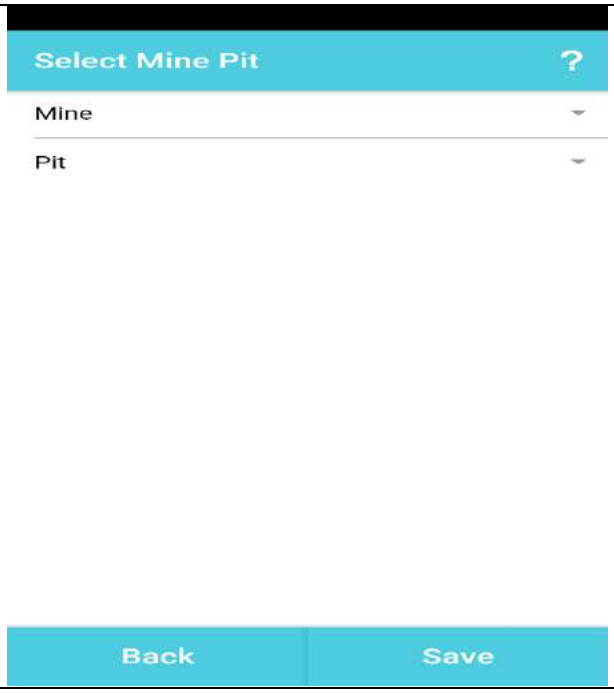


Fig A: page before selecting mine and pit

Fig D: page after selecting mine and pit

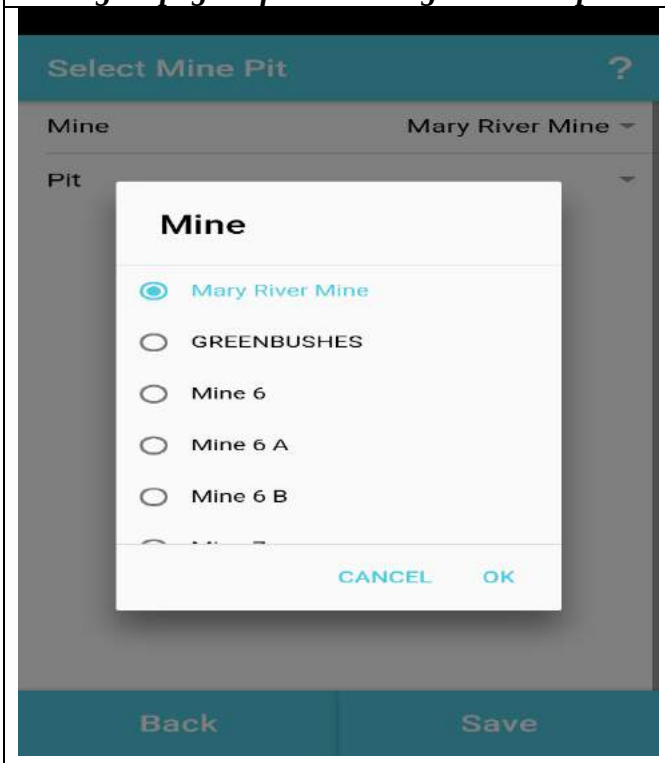


Fig B: Selection of mine

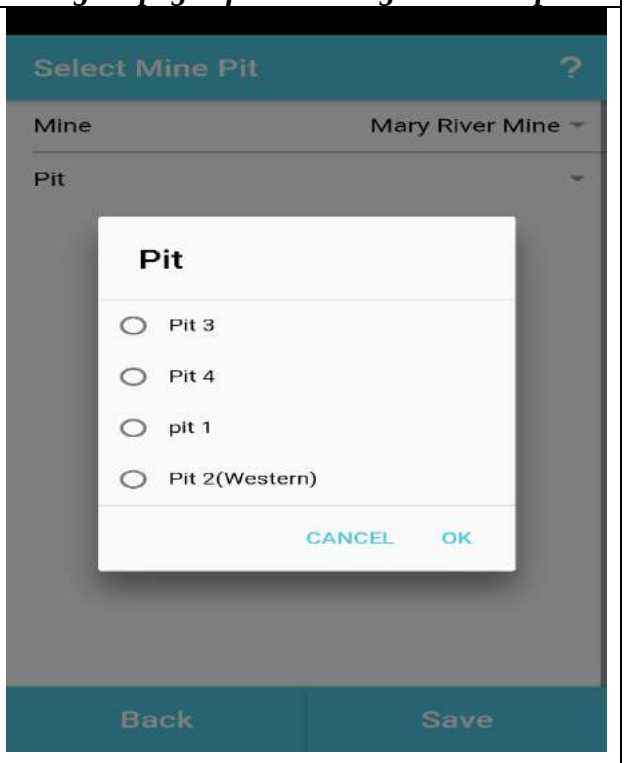
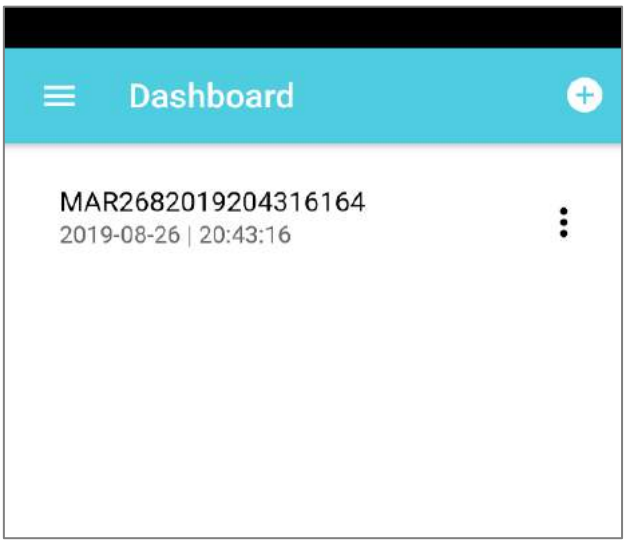


Fig C: Selection of pit

Step: On clicking the save button

you will be directed to a new page.

OUTPUT:

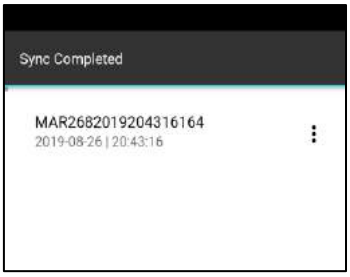


- Clicking on this icon will give you the following options:

EXPORT: you can export the file in pdf format.

SYNC: you can sync this existing file directly to BIMS.

Step 1: click on sync, then this will be shown to the screen.



Step 2: then open the BIMS app and click on manage blast, thereon select the **blast record source** as **sblast** and then click on show to see the results.

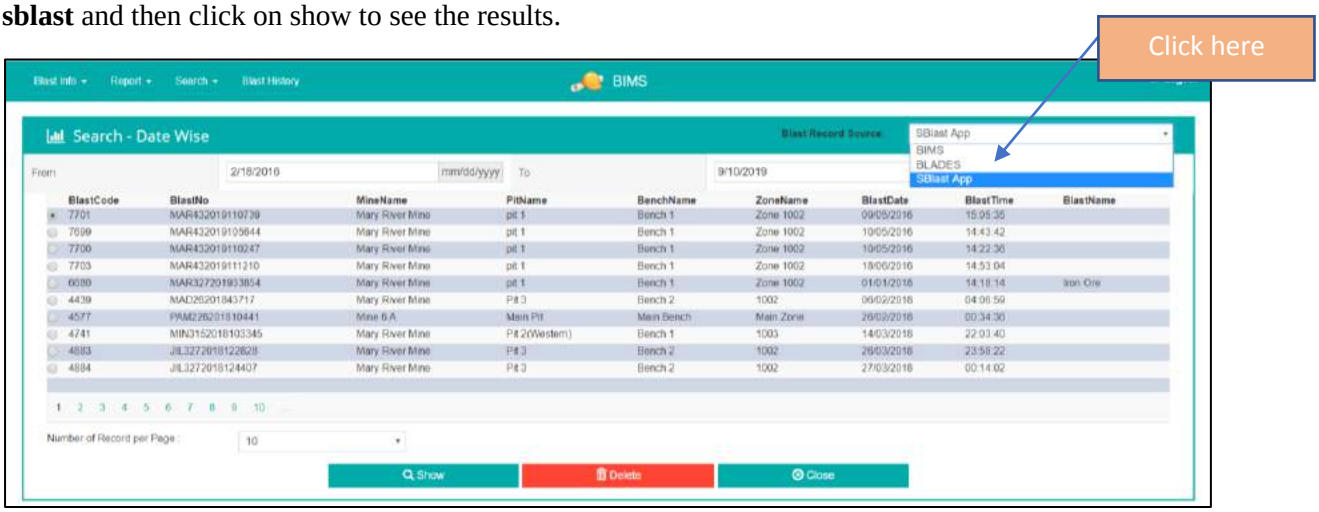


Figure BIMS date wise search for synced file.

Step 3: select the file you want to open. Once you open the respective file you will see all the data from SBlast App has been synced along with the blast media of SBlast App.

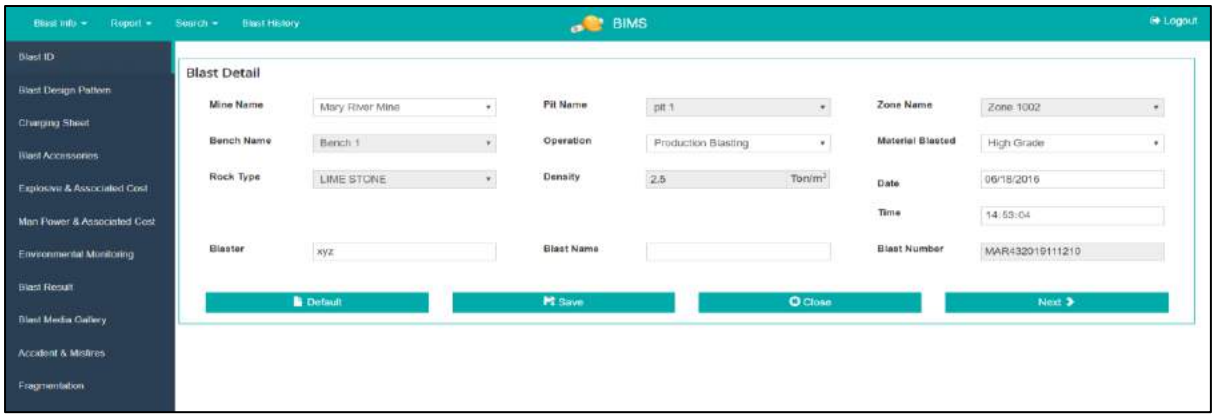


Figure sblast synced report

CANCEL: cancels the respective step.

**while the other icon that is shows the screen as follows:

Home: home page will take you to the dashboard.

Blast: this will take you to the blast details.

Predictors: this will take you to the predictors results.

Document:

Switch mine and pit: you can easily switch the names of mine and pit name.

MineExellence videos: it contains video lectures related to this software and its developer company.

Instructions and settings: it consists of all the basic instructions and setting options.

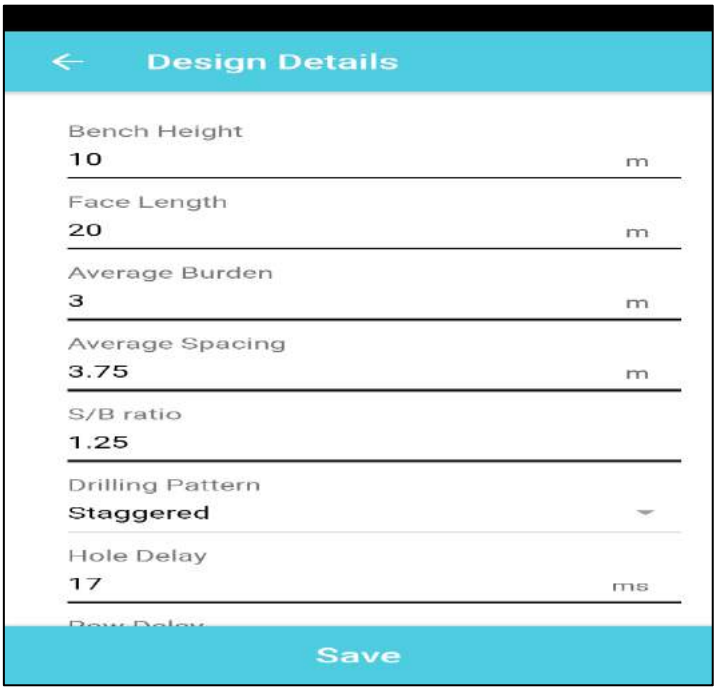
STEP: now if you click on this

you will be directed to blast details page that further have few modules. The page will look like as:

1. BLAST INFO : this will consist all the basis information related to that mine.

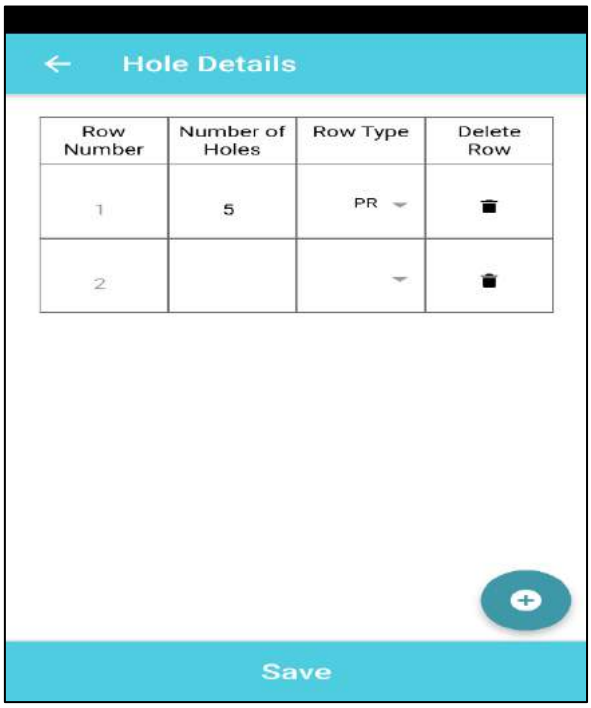
Step: save the information and then proceed to the next icon.

2.DESIGN DETAILS : All the details related to design are available in this, like

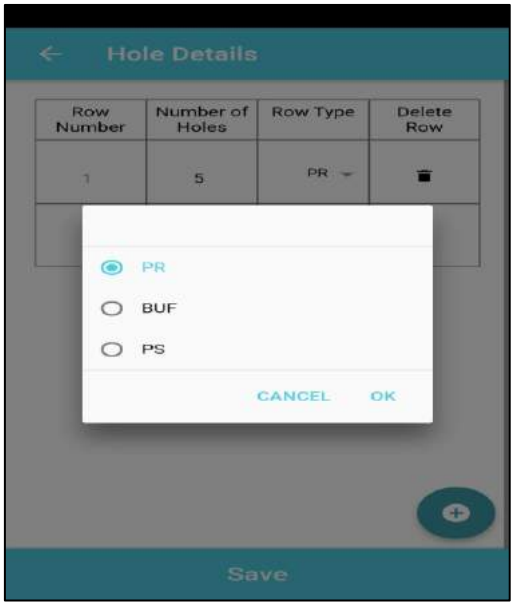


Step: click on save button and then press back button.

3.ROW DETAILS : it consist information of holes in each row.



Row type: click on the drop down button to select the type of holes in a row, the options are as follows



PR: for production holes.

BUF: for buffer holes.

PS: for pre-split holes.

Step: click on save button to proceed further.

4.INDIVIDUAL HOLE DETAIL :

It contains the information of each and every hole in the following format

**if you click on any of the row a new screen will pop up consisting of information of each hole like :

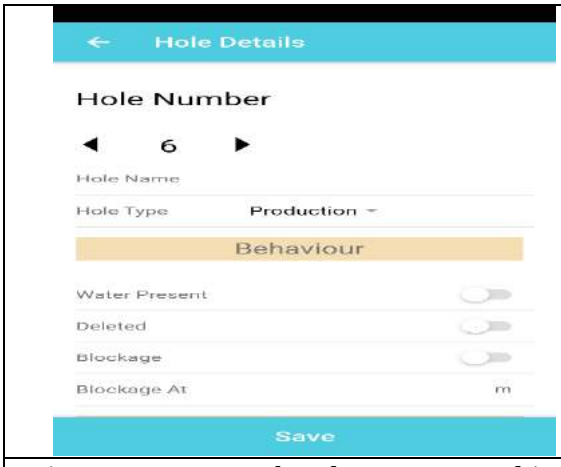


Fig: Parameters related to water condtions

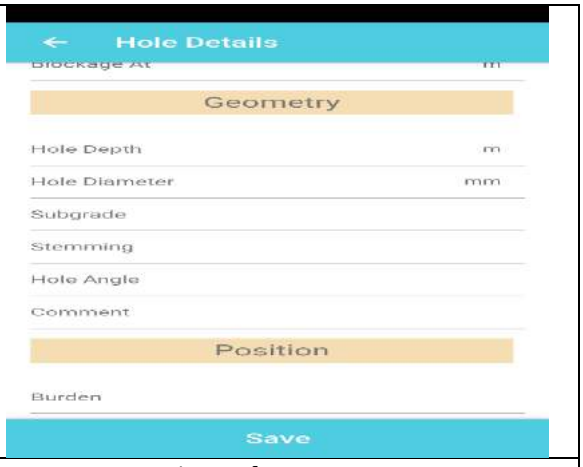


Fig:Hole geometry

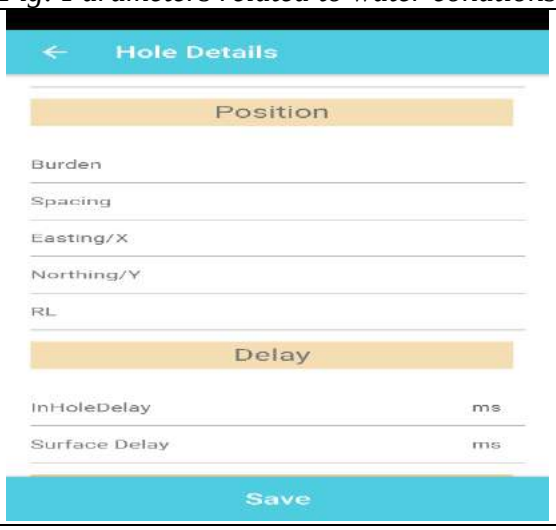


Fig: Position defining parameters

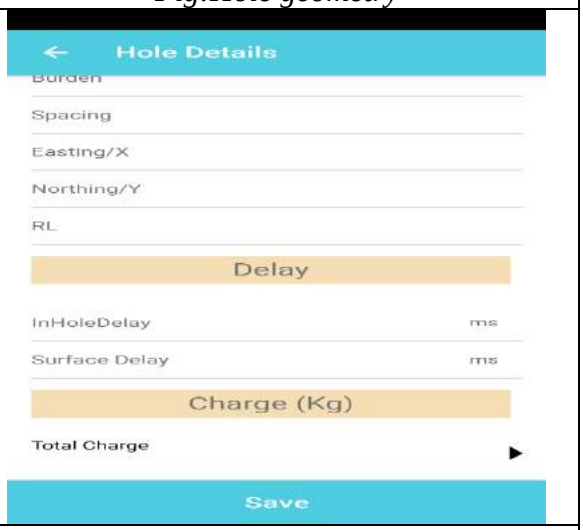
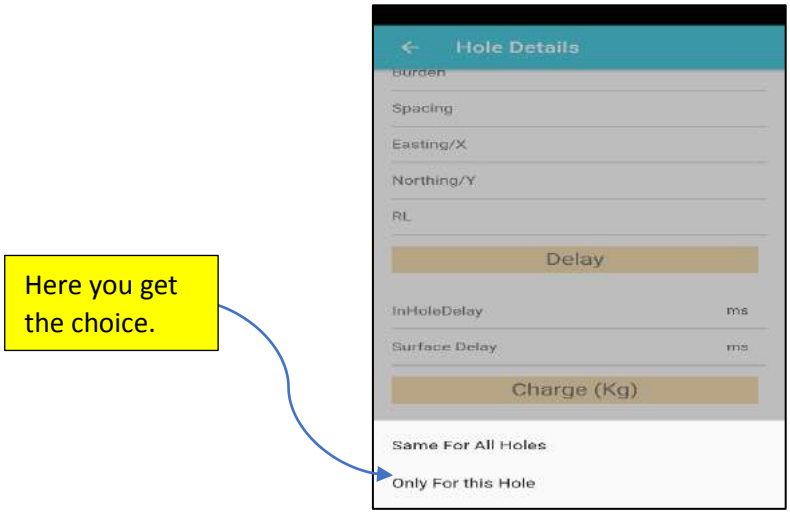


Fig: *Charge related information*

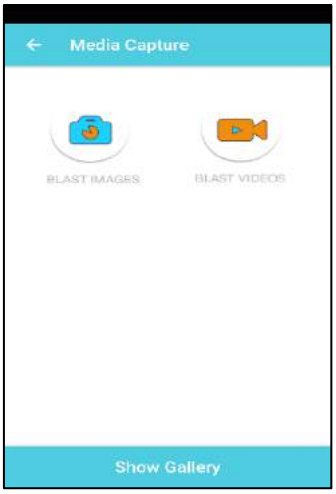
Step1: You can change any of the parameter to any of the individual hole if required and then click on save button Save.

Step2: A message will pop up asking if these changes should be kept for that individual hole should be same for all hence multiple hole selection is available.

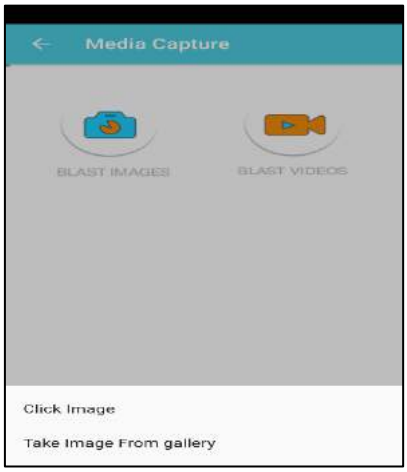


5.CAMERA :

Here you can save the images and videos related to the blast :



: click on this icon to either upload the picture from gallery or click a new one.

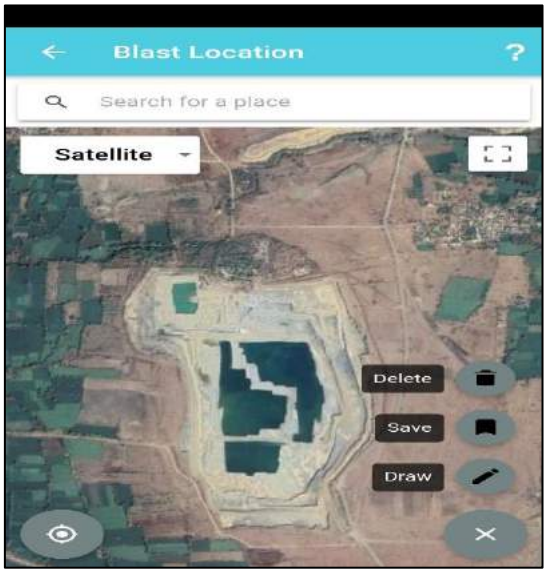


Show Gallery: this module keeps the gallery updated and contains all the images and videos related to that blast.

6.BLAST LOCATION :

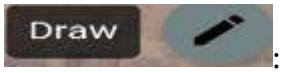
Location of the mine can be stored

: when you will click on this icon more options will be showed up for editing in map.



: this allows you to delete the selected location so that you can plot a new.

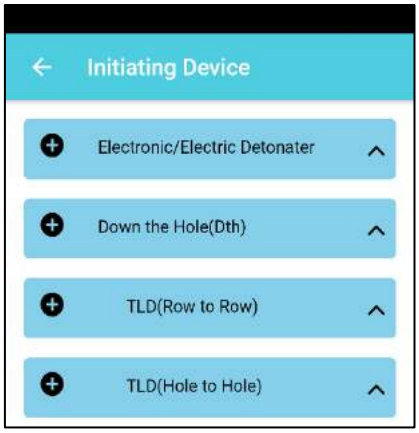
: you can also save the location on map.



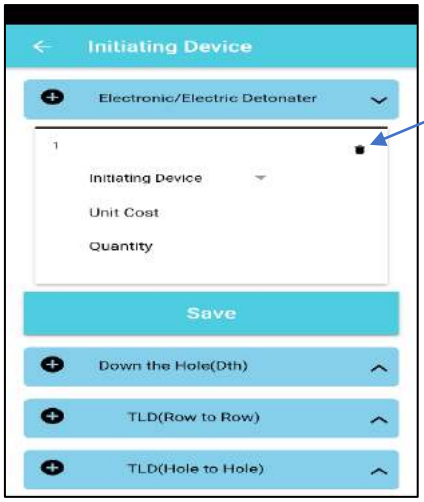
: edit the map by drawing over it.

7.INITIATING DEVICES :

Contains all the information related to the initiating devices in that blast:

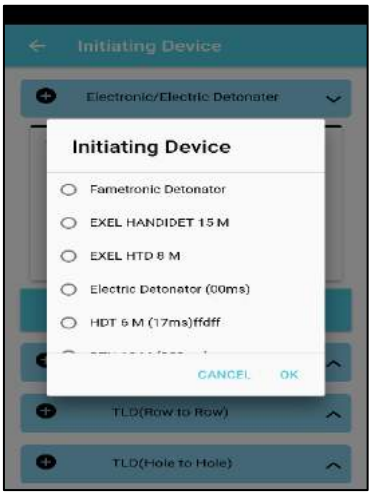


: clicking on this icon will show a drop down like:



Click here to delete any of the devices.

: use this icon if you want to add a new initiating device.



8.ROCK :

Contains all the rock properties/characteristics:

Fig : rock characteristics

- You can either correct or add data to dable as desired.

3.BLAST PROCESSES :

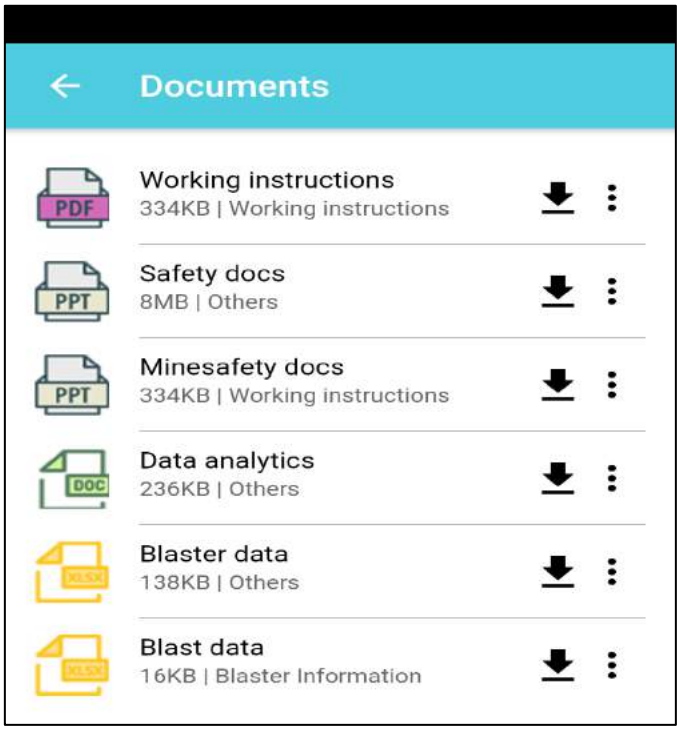
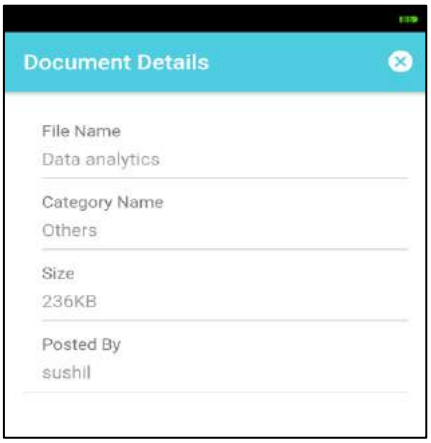


Figure: all the document files are available here

: use this icon to download the respective files.

: this icon will direct you to the detailed information of the corresponding document.



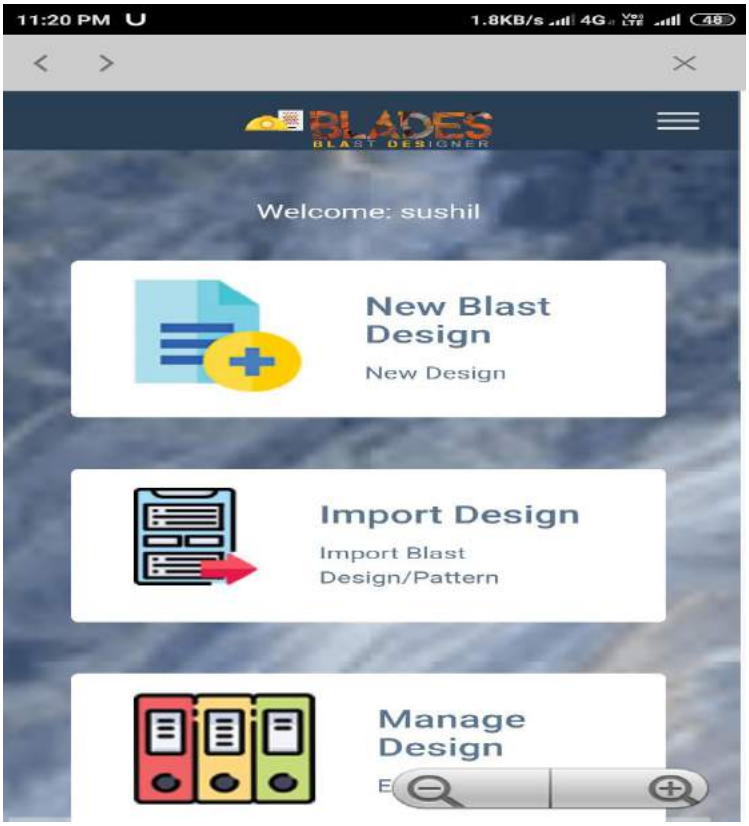
:click on this icon so that you can be directed to the previous page.

4.BLAST DESIGNER :

This will direct you to the BLADES link that is a software that is developed for blast designing but that is cloud based by team mine exellence :

- Once you click on this link you will be directed to BLADES :

- Then using this BLADES, you can make a complete blast report and then export in ether excel or pdf format.

- 

- Hence using this Smart Blast App, a real time data prediction and analysis can be done.

- an overview of our blasting plan can be visualized also we can sync our plan to BIMS and BLADES for proper estimation of plan and costing.

-Blast Designer on Smart Blasting App will be available only if you have purchased web BLADES.