

SYSTEMATIC PROCESS OF MINE DEVELOPMENT WORKSHEET AT GRASBERG BLOCK CAVE MINE (GBC), PT FREEPORT INDONESIA

F Panjaitan¹, Danie²

1.

Superintendent GBC Short Term Planning, P.T. Freeport Indonesia, 99967, Email: fpanjait@fmi.com

2.

Former GBC Engineer Short Term Planning, - , 12160, Email: nielra7@gmail.com

Abstract

Grasberg Block Cave (GBC) Mine is a business unit of PT. Freeport Indonesia (PTFI) consisting of a large copper and gold orebody that is being mined utilising the block caving method. The GBC mine started production in 2019 and is currently ramping up to reach peak production of 130,000 tpd in 2023.

As one of the largest underground mining operations in the world, GBC requires high development rates of lateral tunnel excavation.

Following the commencement of development in 2008, lateral development rates of GBC increased with reaching peak development rates in 2016 of 28,500 mLinear advance, equal to 32,500 equivalent advance (mDeq). This equates to over 2,700mDeq developed per month. As the project shifts towards the production ramp up, annual development rates have been reduced to 24,000 mDeq in 2019.

The main system used to control development is the Development Worksheet. This system is engineered as a tool to ensure development is carried out in accordance with the approved design and plan, delivering all crucial information to be used as a standard for the operational implementation, as well as to raise any possible hazards in concerned excavation area. Development Worksheet is specific system used to capture all information based on field actual condition and slightly different with Plan of Intent drawing that capture information based on block model and long term purposes.

This paper will describe the key functions of Development Worksheet in GBC and explain the lifecycle of its workflow that becomes an important part in the system. With the scale of the GBC operation, failure to follow systematic assessment and approval procedure can lead to undesirable consequences to the mining operation, in efficiency, cost and safety. An in-depth understanding of the process by all stakeholders is required to optimise the worksheet function and eliminate miscommunication.