

GLOBAL JOURNAL OF ENGINEERING SCIENCE AND RESEARCHES PLANNING SECONDARY MINE PLAN FOR THE 2nd YEAR PIT PT SENAMAS ENERGINDO MINERAL CENTRAL KALIMANTAN

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ABSTRACT

PT. Senamas Energindo Mineral is a coal mining company in East Barito Regency, Central Kalimantan Province. Every mining business activity must have negative impacts such as health hazards to the community around the mining area, environmental damage and so on. To minimize these negative impacts, especially related to environmental damage, in accordance with Minister of Energy and Mineral Resources Regulation No. 18/2008 concerning Reclamation and Mine Closure, each Mining Business Permit holder (IUP) is required to prepare a mine reclamation and closure plan in accordance with the principles the principles of the environment, occupational safety and health, and conservation of minerals.

The study was conducted to determine the management of top soil and overburden for the 2nd year pit and to determine the time needed to arrange the land in the 2nd year pit. This research was conducted on the former mining land in PIT 2 PT. Senamas Energindo Mineral.

From the results of the analysis it can be concluded that the land structuring system for overburden is a flat leveling system with a flat terrace which has a maximum slope of 5%, the total cover land requirement for the 2nd year pit is 30,691,618.45 LCM, while the overburden pit for the second year -2 which is still stored in the waste dump area is 20,630,367.7 LCM, the rest is taken from the cover tanning in the 3rd year pit of 10,061,250.75 LCM, the total need for top soil is 573,640 LCM, the available top soil is 604,231, 29 LCM, and the total time needed to arrange the ex-mining land of PT. Senamas Energindo Mineral in the 2nd year pit is 524 days.

Keywords: top soil management, cover land management, land arrangement.

I. INTRODUCTION

PT. SenamasEnergindo Mineral is a coal mining company located in the villages of Jawetan, KarangLangit, Kandris, Lagan and East Janah. East Dusun District, KarusenJanang and Awang, East Barito Regency, Central Kalimantan Province. Mining activities have been carried out to date based on the results of exploration and feasibility studies conducted since 2009.

PT. SenamasEnergindo Mineral has been mining since 2010 after obtaining approval based on Decree of East Barito Regent No. 516 of 2009 concerning Approval of Increasing Exploration Mining Business Permits into Mining Business Production Operations Permits to PT. SenamasEnergindo Mineral on December 8, 2009. The amount of coal produced from 2010 to October 2011 amounted to 1,109,132 tons.

In the mining plan of PT. SenamasEnergindo Mineral will operate for eleven years and will gradually open eleven mine openings (PIT), each of which is planned to be operational for 1 year.

Every mining business activity must have negative impacts such as health hazards to the community around the mining area, environmental damage and so on. To minimize these negative impacts, especially related to environmental damage, in accordance with Minister of Energy and Mineral Resources Regulation No. 18/2008 concerning Reclamation and Mine Closure, each Mining Business Permit holder (IUP) is required to prepare a mine reclamation and closure plan in accordance with the principles the principles of the environment, occupational safety

and health, and conservation of minerals. Reclamation is an activity that aims to improve the use of disturbed land as a result of mining business activities in order to function and be effective according to its purpose.

II. METHOD & MATERIAL

Methods

The research methods carried out include:

a. Field survey.

Aims to determine the location of ex-mining land that will be used as the location of the former mining land.

b. Collection and identification of secondary data.

Secondary data includes: Map of the location of the achievement of the area, climate and rainfall data, mining authority map, the area of land to be reclaimed, the need for overburden, the availability of overburden.

c. Study of literature.

Study the literature relating to research conducted to obtain references and information as a basis for solving problems to be discussed as well as supporting and supplementary materials related to the research conducted.

Literature study includes: thesis, internet browsing and previous research reports.

Material

The material used in this activity is secondary data about:

1. Mine Progress Map.
2. List of All Types of Vegetation at Research Sites.
3. Types of Cultivation Plants in the Research Location.
4. Reclamation equipment used at the Research Site.

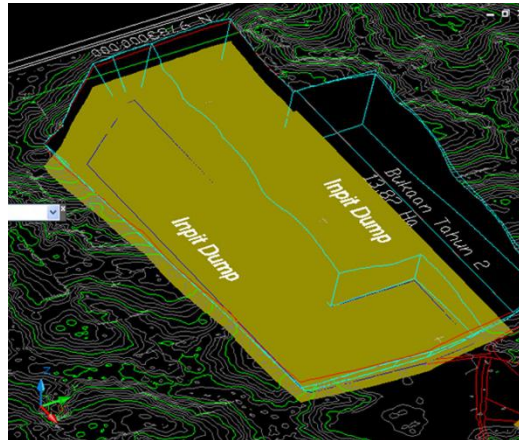
III. RESULT & DISCUSSION

The 2nd year pit had an area of 34.2 Ha with a total available overload volume of 25,531,660.45 LCM, according to the backfilling method used, namely backfilling, the open hole was still open in the 1st year pit that was owned by a volume of 4,901,292.75 will be stockpiled by material from the 2nd year pit and the remainder will be stockpiled in a wastedump area of 20,630,367.7 LCM and later after mining is completed the overburden will be returned to the 2nd year pit itself. Because the overburden material in the 2nd year pit is 4,901,292.75 LCM filled in the first year pit and there is also coal mined in the second year pit which has a volume of 5,159,958 LCM, so there is an area in the year pit the second that is still open is 10,061,250.75 LCM. The area that is still open will be covered with material over burden from the 3rd year pit which has an opening hole area of 44.96 Ha and the total volume of over burden that is dismantled is 29,137,970.3 LCM. In the 2nd Year Pit, a flat terrace will be formed because of seeing the steep topography and revegetation plan that will be carried out.

To close a former pit in the second year pit where the overburden has been moved to a waste dump area, it is necessary to carry out loading and unloading activities so that it can be returned to the second year pit. The loading and unloading equipment used were 9 PC komatsu backhoes for 9 units, 21 for HD 295-5 dumptruck and 2 units for Caterpillar D-7H Bulldozer. All of these tools are tools that are also used by the company in the land structuring process in the 1st year pit.

By using the D-7H caterpillar bulldozer, the 2 nd year pit that has been closed will be leveled in accordance with the shape of the terrace to be made ie a flat terrace with a slope of less than 5% with reference to the initial topographical conditions and agreement with the government and local communities that will use this ex-mining land for rubber plantations.

The transport distance from the wastedump area to the opening hole of the second year is 1km using HD 295-5 dumptruck can be loaded at 41,261 LCM / day. So to be able to move the ground cover of 20,630,367.7 LCM takes 500 days.



Picture 1 Pit Model Year 2

So that the 2nd year pit area can be revegetated, then the topsoil arrangement will be arranged after the cover land arrangement will be carried out in accordance with the desired landform. Land management must be done as well as possible so that the availability of top soil can be used optimally and plants can grow well. The amount of top soil available for land structuring activities in the pit area of the second year is $604,231.29 \text{ m}^3$, while the cover land needed for land use in the second year pit is $573,640 \text{ m}^3$.

By using the same mechanical equipment used to restore the overburden, the process of returning and topping up can take 15 days.

The terrace that is made is a flat terrace with a maximum slope of 5% and on the surface of the terrace will be made ridges that function as a deterrent to erosion as well as a place to be planted according to the agreement with the community, namely rubber plants.

For working on mounds, after the top soil needed for making mounds has been moved to the former quarry land, assisted by a mechanical device namely a bulldozer for making mounds it will be done with human labor with 9 days with 20 teams and each team has 4 people.

IV. CONCLUSION

Based on the above research, the conclusions obtained are:

- The land arrangement system for overburden is a flat leveling system with a flat terrace which has a maximum slope of 5%.
- Total cover land requirement for the 2nd year pit is $30,691,618.45 \text{ LCM}$, while the 2nd year pit cover which is
- still stored in the wastedump area is $20,630,367.7 \text{ LCM}$, the remainder is taken from the overburden in the year to pit -3 amounting to $10,061,250.75 \text{ LCM}$.
- The total required top soil is $573,640 \text{ LCM}$, the available top soil is $604,231.29 \text{ LCM}$.
- The total time needed to arrange the ex-mining land of PT. Senamas Energindo Mineral in the 2nd year pit is 524 days.

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