

**Perhitungan Serapan Karbon Hasil Revegetasi Pada Lahan Pasca  
Pertambangan Di PT. Bharinto Ekatama  
INTISARI**

Oleh :

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Revegetasi tanaman merupakan salah satu faktor penting penentu keberhasilan kegiatan reklamasi pada kawasan bekas pertambangan. Keberhasilan kegiatan reklamasi dapat dievaluasi melalui perhitungan stok karbon pada kawasan tersebut. Penelitian ini bertujuan untuk menghitung dan membandingkan stok karbon tegakan umur 3, 6, dan 9 tahun pada kawasan revegetasi dengan stok karbon pada kawasan konservasi sebagai pembanding. Penelitian ini dilakukan dengan teknik pengambilan data tegakan menggunakan petak ukur 25 m x 40 m dengan intensitas sampling 10%. Data tumbuhan bawah diambil dengan teknik membuat petak ukur berukuran 1 m x 1 m sebanyak 3 kali ulangan di dalam masing-masing petak ukur tegakan. Perhitungan biomassa tegakan dilakukan menggunakan pendekatan rumus volume tegakan, sedangkan untuk perhitungan biomassa tumbuhan bawah dilakukan melalui perhitungan Berat Kering Tanur (BKT). Simpanan karbon (*Carbon Stok*) dihitung dengan mengkonversi 47% dari biomassa *carbon pool* keseluruhan. Serapan karbon dihitung dengan mengkonversi massa atom C Hasil penelitian ini menunjukkan bahwa semakin bertambahnya umur tegakan maka nilai dan karbon stok dan serapan karbon yang terkandung semakin besar. Hasil perhitungan menunjukkan nilai karbon stok dan serapan karbon pada tegakan umur 3, 6, dan 9 tahun secara berturut-turut sebesar 58,94 ton/ha dan 214,19 ton/ha, 27,05 ton/ha dan 99,28 ton/ha, 27,7, 14,2 ton/ha dan 49,50 ton/ha. Nilai karbon stok dan serapan karbon total di dapatkan dari keseluruhan *carbon pool* di atas tanah.

**Kata kunci** : Reklamasi, Revegetasi, Pertambangan, Biomassa, Stok Karbon, Volume

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## Calculation of Carbon Sequestration from Revegetation on Post-Mining Land at PT. Bharinto Ekatama

### ABSTARCT

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Plant revegetation is a crucial factor determining the success of reclamation activities in post-mining areas. The success of reclamation activities can be evaluated by calculating the carbon stock in the area. This study aims to calculate and compare the carbon stock of stands aged 3, 6, and 9 years in the revegetation area with the carbon stock in the conservation area as a comparison. This research was conducted by collecting stand data using a 25 m x 40 m plot with a sampling intensity of 10%. Understorey data were collected using a 1 m x 1 m plot technique, repeated three times within each stand measurement plot. The biomass calculation of the stand was carried out using an volume equation approach, while the biomass calculation of the understory was done through the Oven Dry Weight (ODW) method. Carbon stock was calculated by converting 47% of the total carbon pool biomass. Carbon stock is calculated by converting 47% of the overall biomass carbon pool. Carbon sequestration is calculated by converting the atomic mass of carbon. This research indicates that as the age of the stand increases, the value of carbon stock and carbon sequestration contained also increases. The calculation results show the values of carbon stock and carbon sequestration in stands aged 3, 6, and 9 years are respectively 58.94 tons/ha and 214.19 tons/ha, 27.05 tons/ha and 99.28 tons/ha, 27.7, 14.2 tons/ha and 49.50 tons/ha. The total carbon stock and carbon sequestration are obtained from the overall calculation of the above-ground carbon pool.

**Keywords:** Reclamation, Revegetation, Mining, Biomass, Carbon Stock, Volume

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