

**RANCANGAN TEKNIS REKLAMASI PENAMBANGAN PASIR DAN
BATU (SIRTU) BERDASARKAN KONDISI EKSISTING LAHAN DI
DUSUN DIWAK, DESA SUMBER, KECAMATAN DUKUN,
KABUPATEN MAGELANG, JAWA TENGAH**

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INTISARI

Penelitian dilaksanakan pada Dusun Diwak, Desa Sumber, Kecamatan Dukun, Kabupaten Magelang, Jawa Tengah yang merupakan area penambangan pasir dan batu pada lahan milik perseorangan dengan sistem tambang terbuka (*quarry*) dan ditambang secara tradisional. Tujuan penelitian adalah mengetahui kondisi eksisting lahan akibat kegiatan penambangan pasir dan batu (sirtu) dan menentukan rancangan teknis reklamasi tambang yang sesuai dengan lahan bekas tambang pasir dan batu (sirtu) di lokasi penelitian.

Metode penelitian yang digunakan yakni metode survei dan pemetaan lapangan, pengambilan sampel tanah dengan *purposive sampling* (*Non Probability Sampling*), analisis laboratorium, dan metode evaluasi. Dilakukan pengukuran menggunakan kompas, meteran, dan GPS untuk pemetaan topografi di lapangan serta pengukuran parameter batas tepi galian, tinggi dinding galian, kemiringan tebing galian, relief dasar galian, dan kondisi jalan. Pengamatan dilakukan pada parameter pengelolaan tanah pucuk. Hasil pengukuran dan pengamatan dideskripsikan untuk menggambarkan kondisi eksisting lahan bekas tambang berdasarkan parameter-parameter kriteria kerusakan lingkungan yang mengacu pada Keputusan Gubernur DIY No. 63 Th. 2003 tentang Kriteria Baku Kerusakan Lingkungan Bagi Usaha Dan/Atau Kegiatan Penambangan Bahan Galian Golongan C di Wilayah Propinsi DIY, sehingga menjadi dasar dalam merancang teknis reklamasi sesuai kondisi di lapangan.

Berdasarkan hasil penelitian dan analisis diketahui kondisi eksisting lahan tambang sebagai berikut : tidak adanya pengelolaan terhadap tanah pucuk, batas tepi galian memiliki >5 meter dari batas kepemilikan lahan, relief dasar galian berupa cekungan >1 meter dan timbunan dengan tinggi 1,7 meter, kemiringan dinding galian rata-rata 81° , tinggi dinding galian dengan $\pm 11,6$ meter, kondisi jalan tambang dengan 89% bergelombang dan berkerikil, serta tutupan lahan/vegetasi 37,8%. Arahan teknis reklamasi yang dianjurkan dengan pembuatan teras bangku dengan perbandingan tinggi 3 meter dan lebar 6 meter (sudut slope α / kemiringan jenjang $<45^\circ$) serta pembuatan SPA. Teknik penanaman pada sistem tanam monokultur tanaman tahunan menggunakan sistem tanam pot ukuran $0,3 \text{ m}^3$ dengan jarak tanam $3 \text{ m} \times 3 \text{ m}$. Tanaman pioner yang digunakan adalah pohon sengon dan rumput vetiver sebagai *cover crop*.

Kata kunci: Reklamasi, Penambangan Pasir dan Batu, Kerusakan Lahan, Revegetasi

**TECHNIC DESIGN RECLAMATION OF SAND AND ROCK MINING
BASED ON CONDITIONS OF EXSISTING LAND AREA IN DIWAK
HAMLET, SUMBER VILLAGE, DUKUN DISTRICT, MAGELANG
REGENCY, CENTRAL JAVA**

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ABSTRACT

Magelang Regency, Central Java was an area that had abundant natural resources for sand and rock exploitation. The research was conducted at Diwak Hamlet, Sumber Village, Dukun Subdistrict, Magelang District, Central Java which was a privately own land for sand and rock mining used traditional mining method. The purpose of this research was to determine the condition of existing land due to sand and stone mining activities and determine the technical design of mine reclamation in accordance with former sand and stone mining sites at the study site.

The research method used in field were survey and mapping method, soil sampling used purposive sampling, laboratory analysis, and evaluation methods. Measurements used a compass, meter, and GPS for topographic mapping in the field as well as measurements of parameters of excavation edge, excavation wall height, excavation slope, excavation baseline relief, and road conditions. Observation made on the parameters of top soil management. The measurement results and observations were described to the existing conditions of ex-mining land based on the parameters of environmental damaged criteria that refer to the DIY Governor Decree No. 63 Th. 2003 towards the Standard Criteria for Environmental Damage for Businesses and / or Mining Activities for C Class Mining in the DIY Province, so as to become the basis for designing technical reclamation according to current conditions in field.

Based on the research, the post-mining existing conditions was known as follows: no management of topsoil, excavation boundary classified as good more than 5 meters from the land ownership limit, the base relief excavation was a basin with depth of more than 1 meter and heap with a height of 1.7 meter, the average wall slope was 81°, the height of the excavation wall with an average of 11.6 meters, the road condition of mine was bumpy and full of gravel and percentage was 89%, and land cover/vegetation reaching 37.8%. The recommendation of reclamation technic was maked bench terraces with a ratio of 3 meters high and 6 meters wide (slope angle α/slope of less than 45°) and maked drainage channels. The planting technique in a monoculture system of annual plants uses a pot planting system of 0.3 m³ with a spacing of 3m x 3m. The pioneer plants used was sengon and vetiver grass as cover crop plant.

Keywords: Reclamation Plan, Sand and Rock Mining, Land Degradation, Revegetation