ABSTRAK

Lokasi penelitian berada di wilayah IUP PT. Satria Mayangkara Sejahtera, secara administratif terletak di Daerah Tanjung Telang, Kecamatan Merapi Barat, Kabupaten Lahat, Provinsi Sumatera Selatan. Penelitian ini bertujuan untuk mengetahui secara lokal kondisi geologi yang mencakup satuan batuan, struktur geologi yang berkembang, stratigrafi, geomorfologi, pola pengaliran, serta mengetahui jumlah cadangan batubara *seam* D di daerah penelitian dengan metode penampang. Penulis menemukan hal yang saling terkait dan menarik dari sisi geologi. Terdapat variasi tingkat kemiringan lapisan yang memiliki arah relatif sama. Kemudian dalam meghitung cadangan, digunakan metode penampang karena memungkinkan untuk memahami bagaimana kemiringan batubara menyebar dari dip yang rendah hingga tinggi. Dengan cara ini, kita dapat menentukan batas atau *boundary* yang sesuai dengan karakteristik geologi di daerah penelitian, sehingga meghasilkan cadangan yang ekonomis saat ditambang. Selain itu, topografi di daerah penelitian relatif datar dan bergelombang lemah, yang mendukung dasar perhitungan cadangan ini.

Metode yang digunakan dalam penelitian yaitu berupa pengolahan data primer maupun sekunder. Dalam pengolahan hasil geologi, tahapannya melalui kajian pustaka pemetaan lapangan, serta berbagai macam analisis seperti analisis petrologi, mikropaleontologi, analisis bentuk lahan, struktur, dan stratigrafi. Kemudian untuk perhitungan cadangan batubara, digunakan metode penampang. Tahapannya berupa menghitung tebal terkoreksi data bor, melakukan permodelan batubara *seam* D, membuat *boundary* dan desain pit, menarik sayatan dan membuat penampang, kemudian melakukan perhitungan luas, volume, serta *stripping ratio*. Untuk *software* yang digunakan dalam penelitian ini adalah *ArcGIS*, *Minescape*, *AutoCAD*, dan *GlobalMapper*.

Pola pengaliran yang berkembang adalah Dendritik yang menandakan dikontrol oleh litologi seragam dan berbutir halus dengan kelerengan sedang-rendah. Geomorfologi di daerah penelitian dibagi menjadi 2 bentuk asal, Denudasional meliputi Perbukitan Bergelombang Lemah (D1), kemudian Antropogenik meliputi Jalan (A1), Dataran Tambang (A2), Dataran Perkebunan (A3), *Disposal* (A4), serta Tambang (A5). Struktur di daerah penelitian adalah Homoklin, dengan kemiringan kearah Timur Laut, serta juga ditemukan kekar di batubara berupa *cleat* yang memiliki arah tegasan utama Timur Laut-Barat Daya. Stratigrafi daerah penelitian tua ke muda berupa Satuan batulempung Formasi Muara Enim yang berumur Miosen Akhir, diatasnya Endapan aluvial berumur Holosen. Lingkungan pengendapan Satuan batulempung Muara Enim berupa *Transitional Lower Delta Plain*. Litologi penyusunnya adalah batulempung dengan sisipan batulempung hitam, konkresi siderit, batulanau, batupasir, dan batubara. Perhitungan cadangan batubara *seam* D menggunakan metode penampang melalui penarikan sayatan tiap 50 meter. Hasil yang didapatkan yaitu cadangan batubara 765379,46 mT dengan *striping ratio* 5,30949991, yang menandakan rasio penambangan batubara:*overburden* = 1:5,3.

Kata kunci: *Batubara, Cadangan, Geologi, Penampang*

ABSTRACT

The research location is in the IUP area of PT. Satria Mayangkara Sejahtera, administratively located in the Tanjung Telang Region, West Merapi District, Lahat Regency, South Sumatra Province. This research aims to determine local geological conditions including rock units and structures developing geology, stratigraphy, geomorphology, drainage patterns, and knowing the amount of coal reservesseam D in the research area using the cross-sectional method. The author finds things that are interrelated and interesting from a geological perspective. There are variations in the level of slope of layers that have relatively the same direction. Then, in calculating reserves, the cross-sectional method is used because it makes it possible to understand how the coal slope spreads from low to high dips. In this way, we can determine the limits orboundary which is in accordance with the geological characteristics of the research area, so that it produces reserves that are economical when mined. In addition, the topography in the study area is relatively flat and weakly undulating, which supports the basis for calculating these reserves.

The method used in the research is primary and secondary data processing. In processing geological results, the stages go through a field mapping literature review, as well as various kinds of analysis such as petrological analysis, micropaleontology, landform, structure and stratigraphic analysis. Then, to calculate coal reserves, the cross-sectional method is used. The stages consist of calculating the corrected thickness of drill data, carrying out coal modeling seam D, make boundary and pit design, drawing incisions and making cross-sections, then calculating area, volume, and so on stripping ratio. For software used in this research are ArcGIS, Minescape, AutoCAD, and GlobalMapper.

The drainage pattern that develops is Dendritic, which indicates that it is controlled by uniform and fine-grained lithology with moderately low slope. Geomorphology in the study area is divided into 2 original forms, Denudational including Weakly Wavy Hills (D1), then Anthropogenic including Roads (A1), Mining Plains (A2), Plantation Plains (A3),Disposal (A4), as well as Mine (A5). The structure in the research area is Homocline, with a slope towards the North East, and joints are also found in the coal cleat which has a main direction of northeast-southwest. The stratigraphy of the old to young study area is in the form of Muara Enim Formation mudstone units of Late Miocene age, above which alluvial deposits are of Holocene age. The depositional environment of the Muara Enim mudstone unit is Transitional Lower Delta Plain. The constituent lithology is mudstone with intercalations of black mudstone, siderite concretions, siltstone, sandstone and coal. Calculation of coal reserves seam D uses a cross-sectional method by making incisions every 50 meters. The results obtained are coal reserves of 765379.46 mT with striping ratio 5.30949991, which indicates the coal mining ratio:overburden = 1:5,3.

Keywords: Coal, Reserves, Geology, Cross-section