

## INTISARI

Timbulan sampah kota Balikpapan dari tahun 2016 - 2020 terus mengalami peningkatan yaitu 443 ton – 482 ton / hari. Salah satu upaya DLH Balikpapan adalah mengoptimalkan fasilitas MRF dan ITF, dan menganalisis berapa kebutuhan sarana tersebut sehingga dapat mengurangi timbulan sampah yang ke TPA Manggar dan menambah usia landfill TPA Manggar. Metode yang digunakan dalam penelitian ini menggunakan metode observasi langsung seperti hasil pendataan jumlah input dan output sampah serta data sekunder meliputi metode geometri dan semua data tentang timbulan sampah kota Balikpapan. Perhitungan analisis kelayakan dan keefektifan sarana pengolahan sampah anorganik MRF dengan metode recovery factor didapatkan sebesar 60,3% sedangkan pengolahan sampah organik ITF sebesar 45,7 %. Dengan kondisi saat ini TPA Manggar dapat digunakan hingga akhir tahun 2025. Dalam pengotimalan pengolahan sampah kota di kedua sarana fasilitas tersebut maka MRF ditambah lagi cakupan pelayanan menjadi 3 kelurahan dan memiliki usia proyeksi hingga tahun 2033. Untuk sarana pengolahan ITF akan dioptimalkan dengan memanfaatkan biogas dari proses tersebut. Tujuan akhir dari penelitian ini yaitu mendapatkan gambaran penambahan berapa kebutuhan tempat pengolahan mulai dari sumber sampah rumah tangga, maka didapatkan dari hasil perhitungan diperlukan tambahan 6 unit fasilitas MRF dan 10 unit fasilitas ITF. Sehingga dengan adanya proyeksi penambahan tempat pengolahan sampah anorganik dan organik didapatkan penambahan proyeksi usia dari TPA Manggar hingga tahun 2028.

Kata kunci: Analisis teknis, proyeksi perancangan, Balikpapan, MRF, ITF, TPA Manggar

## **ABSTRACT**

*Waste generation in Balikpapan from 2016 to 2020 continues to increase by 443 to 482 tons per day. One of the efforts of DLH Balikpapan is to optimize the MRF and ITF facilities, as well as to analyze how much these facilities are needed in order to reduce waste generation at final disposal sites (Landfill) Manggar and enhance the durability of the landfill. The approach utilized in this study employs direct observation methods, such as the results of data collection on the amount of waste input and output, as well as secondary data, such as geometric methods and all data on waste generation in Balikpapan. The calculation of the feasibility and effectiveness analysis of the MRF inorganic waste processing facility using the recovery factor approach obtained a result of 60.3%, while the ITF organic waste processing got a result of 45.7%. With the current condition, Manggar Landfill can be used until the end of 2025 with the current condition, Manggar Landfill can be used until the end of 2025. By optimizing the processing of garbage in these two facilities, the MRF has expanded the service coverage to 3 urban villages and has a projected age of up to 2033. It will be optimized for ITF processing facilities by utilizing process biogas. The primary objective of this research is to determine how many additional processing sites are needed starting with household waste sources, thus the calculation findings show that an additional 6 units of MRF facilities and 10 units of ITF facilities are required. As a result, with the addition of inorganic and organic waste processing sites, Manggar's Landfill estimated age is extended until 2028.*

**Key words:** *Technical Analysis, Design Projection, Balikpapan, MRF, ITF, Manggar landfill*