

## INTISARI

*Excavator* Caterpillar 6020B mengandalkan sistem hidrolik untuk menggerakkan komponen utama seperti *boom*, *arm*, dan *bucket* dengan tenaga besar serta kendali presisi. Penelitian ini mengkaji penyebab tingginya konsumsi pelumas hidrolik dengan menganalisis data *history maintenance* dan hasil *scheduled oil sampling* (SOS). *Root Cause Analysis* menggunakan *fishbone diagram* dan metode *five why* mengidentifikasi bahwa ketidakakuratan pencatatan *lifetime* komponen *hose* dan *seal* mengakibatkan penggunaan komponen melewati masa pakai ideal, menyebabkan kebocoran dan penurunan volume pelumas. Meskipun kondisi pelumas masih dalam batas normal dan produktivitas *excavator* tetap tercapai, konsumsi pelumas yang tinggi berimbas pada peningkatan biaya operasional. Hasil analisis menegaskan pentingnya pengelolaan data usia pakai komponen secara sistematis sebagai strategi pemeliharaan *preventif*. Dengan pemantauan dan penggantian komponen tepat waktu diharapkan biaya penggunaan pelumas dapat dikendalikan secara efektif.

Kata kunci: *Excavator*, Sistem Hidrolik, *Root Cause Analysis*, *Lifetime*,

## ABSTRACT

*Excavator Caterpillar 6020B relies on its hydraulic system to power main components such as the boom, arm, and bucket with great force and precise control. This study examines the causes of high hydraulic lubricant consumption by analyzing maintenance history data and Scheduled Oil Sampling (SOS) results. Root Cause Analysis using a fishbone diagram and the five why method identified that inaccurate recording of the lifetime of hose and seal components caused their use beyond the ideal service life, leading to leakage and reduced lubricant volume. Although the lubricant condition remains within normal limits and excavator productivity is maintained, high lubricant consumption results in significantly increased operating costs. The analysis emphasizes the importance of systematic management of component lifetime data as a preventive maintenance strategy. By monitoring and timely replacing components, it is expected that the hydraulic system performance will remain optimal costs can be effectively controlled.*

*Keywords: Excavator, Hydraulic System, Root cause Analysis, Lifetime,*