ABSTRACT

PT. Multi instrumentation is one of the companies engaged in manufacturing that manufactures measuring instruments in the form of water meter with a trademark Linflow with a system of make to order. The constraints experienced by the company were a hole in the production floor, a long distance between workstations, and the intersecting of material displacement flows. Those things cause material displacement time is greater than the production process time, then it is indicated early that there is waste on the production line PT. Multi instrumentation. For that, it is necessary to do a proposed improvement with the approach To minimize the waste incurred. The Lean manufacturing approach phase is to identify the production process that occurs in the manufacturing of water meter using Value Stream Mapping and Process Activity Mapping. In the depiction of Value Stream Mapping (VSM) The Current State obtained a lead time value of 23796.49 sec and in the depiction of Process Activity Mapping (PAM) Current State obtained a waste transportation of 28%. To identify the cause of waste that occurs then it is identified with the tools 5 why's and Fishbone diagram. After identifying waste, waste transportation is found in the material displacement flow in the water meter production process. Furthermore, the proposed improvements by using the layout of the facilities and improvement of the production floor to minimize waste transportation. After the proposed repairs, the displacement moment can be calculated by multiplying the frequency and displacement distance. The initial displacement moment is 8919 and a displacement distance of 723.5 meters while the proposed displacement moment is 7024 and a displacement distance of 605.5 meters. Further comparison of existing displacement moments with after proposed repairs. From the proposed design improvements, a lead time of 20,425.11 seconds was obtained.

Keywords: *Lean Manufacturing, Waste Transportation, Value Stream Mapping, Proccess Activity Mapping, water meter, Facility Layout Planning*