

The development of model industry in efficient groundwater management according to the 3Rs principle

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This implementation is emphasized on increasing efficiency in industrial groundwater management according to the 3Rs (Reduce, Reuse and Recycle) principle. There are ten pilot factories from three industrial groups consisting of tapioca starch industry, sugar industry and their continuous industry participating in the project. The water consumption pattern was investigated and the consultation was given for improvement in order to be certified as ECO factory. It was found that one factory has abandoned groundwater well (Group A), six factories reserving groundwater well for some office or worker activities (Group B), and three factories have groundwater well and utilizing them in the production process (Group C). The pilot factories can reduce in groundwater consumption ranged between 10%-78% of the total consumption. The top three factories with maximum consumption reduction of 78.63%, 26.37% and 24.50% are B1, C1 and B5, respectively. In addition, there are three factories; B5, B6 and C3 certified as ECO factory.

Keywords: 3Rs principle, increasing groundwater consumption efficiency, industrial groundwater consumption, ECO factory