



TAIHEIYO CEMENT NEWS LETTER

February 28, 2023

“Research and Demonstration Project regarding Sewage Resources Utilization by using New Phosphorus Recovery System” was adopted for the fiscal 2023 as a “B-DASH Project”

The proposal named “Research and Demonstration Project regarding Sewage Resources Utilization by using New Phosphorus Recovery System” (hereafter, the Proposal) suggested by the joint research group composed of Taiheiyo Cement Corporation (Head Office: Bunkyo-ku, Tokyo; President: Masafumi Fushihara, hereafter, the Company), METAWATER Co., Ltd. (Head Office: Chiyoda-ku, Tokyo; President: Kenji Yamaguchi, hereafter, METAWATER) and Tokyo Metropolitan Government Bureau of Sewerage (Head Office: Shinjuku-ku, Tokyo; Director General: Kouji Okuyama) was adopted as the implementation project for the fiscal 2023 under the Ministry of Land, Infrastructure, Transport and Tourism Sewerage Innovative Technology Demonstration Project (B-DASH Project ^{*1}).

Along with the revision of the Sewerage Control Law in 2015, Sewerage System Administrators are now obligated to make efforts to utilize the sludge they generate into fuel or fertilizer. Effective use of sludge through composting has been promoted so far, but the only about 10% of annual discharge of sludge has been used. In addition, the policy outline of “Headquarters on Measures to Secure Stable Supply of Food and Strengthen the Agriculture, Forestry, and Fisheries Industries”, which was released on December 27, 2022, stated that expanding use of compost and sewage sludge resources and increase of utilization rate of domestic resources by 2030.

Under these circumstances, the Proposal will achieve efficient phosphorus recovery from the filtrate of dehydrator^{*2} of sewage sludge by using phosphorus recovery materials in order to promote the utilization of sewage resources such as sludge.

1. Features of the Proposal

- Phosphorus is recovered efficiently from the filtrate of dehydrator not by using any other chemicals but by using phosphorus recovery materials with both settleability and adsorption.
- The system achieves optimal control by adding the amount of phosphorus recovery materials to follow phosphorus concentration change of the filtrate of dehydrator in order to ensure that the recovered phosphorus meets official specifications for by-product fertilizers as stated in the Act on the Quality Control of Fertilizer.
- Ensures stable quality and supply of recovered phosphorus all year.

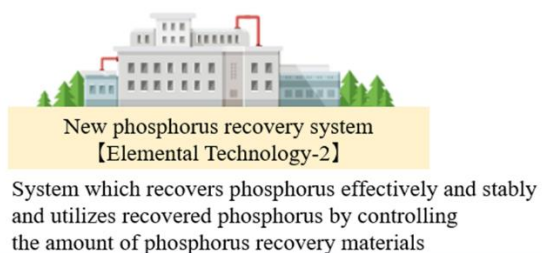
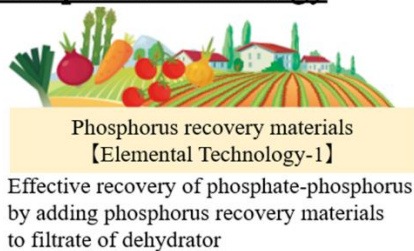
2. Effects of the Proposal

- Utilization of sewage resources
- Contribution to domestic production and stable supply of fertilizer

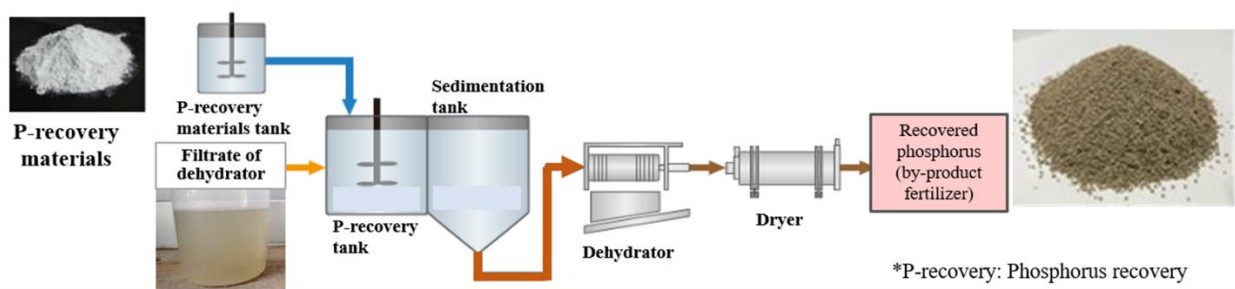
3. Outline of the Project

- Project implementer: Joint research group composed of Taiheiyo Cement Corporation, METAWATER Co., Ltd. and Tokyo Metropolitan Government Bureau of Sewerage
- Field : Sunamachi Water Reclamation Center(Tobu Sludge Plant), Bureau of Sewerage Tokyo Metropolitan Government
- Period : From the day following the date of conclusion of the contract to March 31, 2024 (scheduled)
- Role allocation
The Company:
Overall supervision of the project, collection of operational data regarding phosphorus recovery and study of utilization of recovered phosphorus as fertilizer
Metawater:
Plant construction and overall operation
Bureau of Sewerage Tokyo Metropolitan Government:
Provision of demonstration field, and know-how related to research and development

Outline of Proposed Technology



Flow Diagram of New Phosphorus Recovery System



*1 A demonstration project conducted by the Ministry of Land, Infrastructure, Transport and Tourism in order to accelerate the research, development and practical application of new technologies not only to achieve reducing costs and creating renewable energy in the sewerage business, but also to support the overseas expansion of the water business by Japanese companies.
The abbreviation of **Breakthrough by Dynamic Approach in Sewage High Technology Project**

*2 The filtrate of dehydrator which contains high concentration of phosphorus and is generated in dehydration process