**Q&A one year after the Kaumera launch**

**1. How is Kaumera doing?**

The installation has started

The Nereda treatment plant has been in operation since January 2019. As of October 2019, the Kaumera extraction plant started up. We have done this in steps. As soon as a process step was set up, we moved on to the next step. Kaumera is new and we are the first in the world to make it. That's why you can't quite predict what you will encounter. Sometimes things went smoothly, sometimes there were unexpected situations that had to be solved. In that sense it was pioneering work. Experts from different disciplines and from all partners worked intensively together to make the process run smoothly. After six months the first Kaumera was delivered. We are now continuously working on optimizing the process. Since corona, this has sometimes been somewhat delayed due to restrictions in the transport of materials and opportunities to get experts on site. The next step is to realize a 24-hour production.

The second installation in Epe

In Epe, Waterschap Vallei en Veluwe has built a second Kaumera extraction plant that is connected to an existing Nereda treatment plant. Epe is now being started up and it is expected that the first delivery will take place in November 2020. In Epe, Kaumera will be extracted for communal waste water, in Zupthen we use residual water from the diairy industry. Both water authorities and other partners are working together on the start-up.

**2. What are some of the highlights of the past year?**

Awards

The cooperating partners in the NKOP (National Kaumera Development Program) have won several prestigious awards and nominations:

- Aquatech Innovation Award Winner 2019

- Water innovation Award 2019

- finalist Circular Awards 2019

- Winner (RHDHV) Water Technology Company of the Year in the Global Water Awards 2020

First delivery

*See item 4, sales and finance*

Publicity

We have been approached by dozens of media for general or specialist articles. After the launch we saw a large reach in the media, this has actually continued the year after.

Visits Raw Materials Plant

The first six months after the opening we received many guests in Zutphen like participants of Aquatech, other water authorities, professionals from the water world, delegations interested in purchasing a Kaumera installation, government representatives, education, groups of residents.

Unfortunately this is no longer possible for the known reasons. We have made a short video tour and will continue to receive guests as soon as it is safe again.

<https://www.youtube.com/watch?v=btpj73u8qTI>

**3. What applications are there?**

Agriculture

There are promising applications for Kaumera in agriculture. It can be applied as a bio-stimulant and as a slow release fertilizer. Chaincraft is working with various partners on testing and field research. In March 2020 a first delivery was delivered for application on a practical scale.

Building materials

(concrete) coating, building blocks, plate material and stucco material

We are in cooperation with Eco-Makelaar and Saxion about a possible internship assignment in the field of biobased plastering based on Kaumera and biomass.

Composite material

COMPRO

Amsterdam institute for Advanced Metropolitan Studies: <https://www.ams-institute.org/news/can-we-build-bridges-paper-we-flush-down-toilet/>

The COMPRO project builds on the results and insights of WASCOM - in which two large organic waste streams are upcycled to produce high-quality building materials for the city. These waste streams are cellulose fibers from recovered toilet paper and Kaumera. Together they can be used to produce a fully biobased and circular composite material. A material that can be valuable to the construction industry: it has a low weight and similar strength and stiffness to Kevlar.

Omlab

With Omlab we are realizing a project on biobased printing applications with lime, Kaumera and Cellulose. See also: <https://www.omlab.nl/onderzoek-printbaarbiobased/>. We have also involved the workgroup cellulose of the EFGF.

Flocculant

An exploration of the application of Kaumera as a flocculant, coating or thickener is being set up. Flocculation is used in water purification to remove substances from water. This process is applied in the purification of ground and surface water into drinking water as well as in the purification of sewage water. After floating particles in water have been destabilized by coagulation, they can flock together by slow movement in the water. Flocculants accelerate flocculation to larger flakes. The formed flakes can be removed from the water by letting them settle or flocculate or by filtering them out in a sand filter.

Polyelectrolytes are used as flocculants, chemicals consisting of long molecules (polymers). In addition to synthetic flocculants such as polyacrylamide, natural flocculants can also be used.

Fire resistant material and extinguishing agents

Research into various applications because of the excellent fire resistant properties of Kaumera.

**4. Sales**

Has Kaumera already been sold?

In March 2020, the first delivery of 20 tons was sent to biotechnology company Chaincraft, one of the cooperation partners. The Kaumera has been used by Koppert Biological Systems for application as a bio-stimulant. The first results are favorable and we expect a follow-up order from the same customer.

What are the revenues?

We do disclose information on selling prices, it is confidential information.

Other info about sales

For the further market development of Kaumera, a Market Hub will be set up, an organization that will fully focus on developing applications and entering into partnerships for this purpose. A newly hired business developer will be the driving force behind this. All partners will provide experts who will be deployed for this market hub in their own field of expertise.

**5. Expectations next year**

That is still hard to say. We have high expectations for the sales as a bio-stimulant and slow release fertilizer. These are both applications that can be tested in a reasonably short period of time. Other applications may take longer. We cannot determine that yet. But we are convinced that there are considerable sales opportunities and that they may be exploited as early as next year. With the new market hub, we can devote even more effort to well-coordinated research and knowledge sharing.

[www.kaumera.com](http://www.kaumera.com)