

Test report: Vapor line disinfection with Planet Strong at a leading German Dairy manufacturer

Due to the trench situation with biological growth, we have used Planet Strong to dissolve an existing biofilm in the pipeline up to the trench.

For this, we presented 2 200,000 liters of Voko 1 and Hoko 1 vapor water in the vapor tank 2 on February 5, 2020. Voko 1 is the suspected outlier for the quality problems.

On February 6, 2020 we made a 0.5% solution with 1,000 liters of Planet Strong and added vapors from Hoko 2 over the entire test period, which reduced the concentration over the entire amount to a calculated 0.43%.

Test procedure:

- 05.02.2020 14:50 - 19:00 filling of vapor tank 2. COD values Voko 1 = 39.8 - 18.1 / in the tank on 06.02.2020 19.7 COD. Better than expected. It should be mentioned here, that the first 2-3h production (in which we determine the worse values) did not yet go into the tank.
- Around 9:45 we pumped the disinfectant into the tank and let it work in until 11:10 a.m.
- By 11:25 we had rinsed the pipe with 25,000 liters (approx. 90,000 l / h flow rate) of vapor-Planet Strong solution and then left it in the pipe system until 12:25.
- We then rinsed the dissolved biofilm out of the pipe system into the trench by 13:05, so that the disinfection can also work in the running pipe system. A decline and dissolve of biofilms was already visible. Deep yellow-brown to black biofilm clods kept flowing out of the pipe system, which speaks for a detachment and effect of the disinfectant.
- From 13:05 to 15:50, the vapor tank 2 was then emptied with a normal flow rate of approx. 40,000 liters / hour before switching back to vapor tank 1 and "normal operation" was restored.

The entire test procedure can be seen in Appendix 1 (printout of old vapors). Here, the fluctuations are very noticeable every 5 minutes, which is due to the fact that the Hoko brothers collecting tank had reached full level every 5 minutes and was pumped into the stream accordingly.

The following pictures are showing the course into the trench:



These pictures show the entrance to the trench at the beginning of the experiment on the left and a day later on the right. It can be seen that the deposits have decreased significantly, which I could also be seen in the pipeline to the boiler housing from drying 2. There has always been a very light, slimy coating, which is no longer present a day later, or has rebuilt.



These two pictures also show an improvement in the situation due to the flushing process. How long this condition lasts has to be observed first.

Pallet	Entry Date	Commentary	pH-value fl. P0011	COD C0018 ppm	Conductivity C0035 mS	Total hardness C0019 °dH
voko 1	05.02.2020	14:00 /2	8,23	57,9	0,0822	0,2
voko 1	05.02.2020	14:00 /3	7,51	39,8	0,0187	0,1
Voko 1	05.02.2020	Vapor condensate 2	7,95	52,6	0,0824	0,2
Voko 1	05.02.2020	Total vapors 3	7,65	18,1	0,0145	0,1

Pallet	Entry Date	Commentary	pH- value fl. P0011	COD C0018 ppm	Conductivity C0035 mS	Total hardness C0019 °dH
Tank2	06.02.2020	10 Uhr	6,54	19,7	0,0145	0,1
HoKoreservoir	06.02.2020	+Planet Strong	8,26	20,6	0,8094	0,1
Vapor line	06.02.2020	11:30 Uhr	7,98	26,1	0,6009	0,1
Vapor tank 2	06.02.2020	12:50 Uhr	3,87	27,5	0,158	0,1
Trench	06.02.2020	12:30 Uhr	7,48	25,3	0,2614	0,1
Trench	06.02.2020	13 Uhr	7,23	23,5	0,1889	0,1

In addition to the values shown, we also examined the chlorite content of the trench samples and were unable to determine any measurable residues. The salt content of 1.5% in the concentrate is also very low and should therefore not be a problem for discharge into the trench.