

## Svar på spørgsmål modtaget fra Suez den 9. december 2019

1. It is not clear if the contractor from Sub 1 will have to provide pretreated water for contractor from Sub 2. If the pretreatment of the water will be done by 2 different contractors, even with the same methodology, could occur significant differences at the end of pretreatment. Therefore comparison in between results from method 4 and methods 1 to 3 could be difficult. Is the pretreatment to be done by two or one contractors?

Svar:

The contractor for sub 2 will make their own pre-treatment. The purpose of the pre-treatment is to remove iron and manganese from the water. For all 4 AOP-tests the pre-treated water will be analyzed both before and after the test so we can evaluate the efficiency of the 4 different AOP-processes. Therefore, it is not so important if the pre-treatment has not been done in exactly the same way.

2. It is assumed that the shipping of the treated water by contractor Sub 2 to us (Sub 1) is taken into account in Sub 2 offer.

Svar:

Since the contractor for Sub 2 do not know where to ship the water to, you must include shipping of treated water to carbon tests from Denmark to the lab where the carbon tests are performed. Be also aware that the shipping may require transport permits. Both shipping and permits (as mentioned in the special working conditions page 9) must be included in your tender.

3. Is it possible to have more information about the water quality regarding the following parameters: TOC, DOC (dissolved organic carbon), COD, Total N

Svar:

We don't have figures for TOC, DOC, COD and total N.  $TOC = NVOC + VOC$  and you can expect that the main part of the NVOC originates from Grinstedværket substances where roughly 50-65% is carbon (depending of the individual components). We expect 1.5-2.0 mg/l of Grinstedværket substances but earlier we have found 8-10 times higher values. Concerning VOC it will originate from the organic solvents where benzene, 1,2-dichloro ethane and vinyl chloride are the dominating compounds. The sum of these 3 components are expected to be in the range 1600-2200 µg/l but earlier we have found higher values (maximum = 10000 µg/l) in other boreholes. We don't expect a that the contribution from natural organic matter in the ground water will be higher than the contribution from the chemical pollutants.

4. Packing for shipping to Eurofins is provided by Eurofins. Please clarify that packing is also including bottles/container and chemical as mentioned in table 6 of Appendix A.

Svar:

Packing and preservation of sample to Eurofins shall be done in bottles and container delivered by Eurofins. We expect that Sub 1 will supply the chemicals to be used for sample preservation. By preservation of samples for COD excess oxidant must be removed before sending the samples to Eurofins. Instead of Terminox Ultra you can use a reducing

agent (thiosulfate or hydrogen sulfite) but be careful to avoid excess of reducing agent because it will contribute to the figure for COD.

You may assume that bottles ect. from Eurofins can delivered at the site in Grindsted or to an address in Denmark after your choice.

5. Idem 6 regarding Ecotoxicity tests

Svar:

We do not understand the question.

6. In Appendix A - 4.5.2, it is mentioned that **“The best sample from each test series (A-D) is sent to the laboratory performing sub-agreement 3, ecotoxicological tests (4 samples in total).”** Is “The Best” considered as concluded from only COD, TOC, COD... parameters followed during AOP tests or is it also including the overall parameters which will be analyzed by Eurofins (which will required 1 additional month as mentioned in Appendix A). In this last case, the ecotoxicity tests, performed by subcontractor 3, will be delayed of this duration.

Svar:

The best test results from each test series (A-D) are found by analyses or measurements (COD, TOC etc.) done during the AOP tests. We can not wait on results from Eurofins before we shall prepare the carbon tests and the ecological tests.