

RAEVR

{Regie d'Assainissement des Eaux de la Vallee du Richelieu}

Test with Micro-X in Sewage Treatment at RAEVR

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1.0 Introduction

August 10 2005, we met MR. Alan Cartier of the company Cartier Environmental Services Inc. in order to establish an action plan for a test of his product at RAEVR.

The objectives of the test were first to validate the hypothesis that while injecting these bacteria (Micro-X) to raw sewage, a noticeable reduction of sludge ($\pm 50\%$) and odours would be noted, to quantify this decrease, and to estimate the return on investment that would represent the addition of this treatment. Thus, above the reduction in sludge volume and odours, the use of this product would allow reducing operation costs. While favouring the degradation of the organic matters, a reduction of the dosage of coagulants (alum) and of the flocculants (polymers), and a decrease of the operation time of certain mechanical equipments (press, dosing pumps, extraction pumps, etc.) should be observed.

2.0 Methodology

Cartier Environmental Services Inc. proposed a treatment protocol of which will show the details in attachment I.

Following this protocol, the dosage of the product was carried out by the representative of Cartier Environmental Services Inc. During the ten first days, be during the treatment period " shock". The product was injected in higher quantity at the entry of the plant on day #1 and in network head days # 2 to #10

The sequence of the daily treatment was assumed by Aquatech since day #11, be two days a week in network head and the five other days of the week at the entry of the plant, in less quantity.

The dosage points that were kept by the two parties are, in network head, the pumping stations Joffre and Ruth, and at the entry of the plant.

3.0 Analysis & Follow-up

Samples were taken on a daily basis by Aquatech operators for analysis of COD (chemical oxygen demand), BOD5 (biological oxygen demand after five days), and TSS (total suspended solids). Equally, the TSS levels were measured at the dehydrators.

4.0 Results

The analysis of the samples allows us to note a decrease at the level of all the parameters. It is more important if one isolates the month of October in order to obtain more significant data, but there is nonetheless decrease while considering the complete test period of sixty nine days, despite the fact that the first days of treatment generated a considerable provision of TSS since the network was being flushed.

The decrease in sludge volume is noticeable. In fact, for the complete period of the test, we observed a reduction of 34,54% in wet sludge, and 28,53% in dry sludge. For the last phase of the treatment, be the month of October, we note a decrease of 57,30% of wet sludge, and 53,40% of dry sludge.

You will find the detailed results in attachment II, as well as the comparative graphs in attachments III, IV and V.

5.0 Conclusion

The test unfolded itself well, and the results leave us to believe that the introduction of Micro-X in the treatment chain helps to reduce the load at the entry of the plant considerably.

Thus, since the beginning of the Micro-X dosage, we lowered the dosage of the coagulants (alum) by 36%, the quantity of sludge to treat was reduced by more than 50% for the second phase of the treatment, and we equally noticed a decrease of the perceptible odors in the entry of the plant and in the corridors inside the plant.

It is important to recall that the comparisons are carried out from the obtained data in 2004 and that certain variable probably affected the characteristics of the treatment. Among these variables, note nevertheless a volume increase of more than 40% in 2005 and all the residential developments known since the last year, events that could have contributed to increase or to all the less to maintain the load to the entry of the factory.

Attachment I
Treatment Protocol

Attachment II
Results of Analysis

Attachment III
Daily Effluent 2004-2005

Attachment IV
Graph of TSS Levels 2004-2005

Attachment V
Graph of TSS Charge 2004-2005

