[0007] 4) difficult to eject bubbles that would (from time to time) become entrained in the mixing loop and were likewise subject to exponential dilution,

[0008] 5) difficult to fill mixing loop upon startup due to the conflict between high point to remove air and drain angle to drain liquid,

[0009] 6) the connection of the pH tempering liquid to the high flow regime of the mixing loop (although it proves to work well for introducing pH tempering liquids) requires excessive backpressure at the outlet of the skid to stay flow-through of the pH tempering pump (due to venture effects) which in turn make it difficult to prime the pumps including the buffer pump on the current skid,

[0010] 7) a bubbletrap is required where degassing of liquids is present (when blending organics). In the system of the '139 patent, the bubbletrap would have to be in the mixing loop with the sensors which is ineffective for removing bubbles (due to low residence time) – the sensors should be at the low flow regime before the sensors, and

[0011] 8) the mixing loop is not scalable to the smaller systems because of lack of suitable centrifugal pump components.

SUMMARY OF THE INVENTION

According to a first aspect of the present invention, there is provided an accurate blending system for blending first and second liquid components comprising: a first feed adapted to communicate with a supply of the first component; a second feed adapted to communicate with a supply of the second component; a shear blender in communication with the first and second feeds; a first sensor in communication with an outlet of the shear blender; a controller in communication with the first sensor so that a first characteristic of a solution exiting the shear blender can be detected, said controller also in communication with the second feed so that delivery of the second component to the shear blender can be controlled based upon the detected first characteristic.

According to a second aspect of the present invention, there is provided a method for blending first and second liquid components comprising the steps of: providing a shear blender; feeding the first component to the shear blender; sensing a first characteristic of a solution in the shear blender; feeding the second component to the shear blender based on the

sensed first characteristic of the solution in the shear blender; and mixing the first and second components in the shear blender.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Fig. 1 is a schematic of an embodiment of the multi-stage accurate blending system of the present invention.

DETAILED DESCRIPTION OF EMBODIMENTS

[0013] A schematic of an embodiment of the system of the present invention is provided in Fig. 1. As illustrated in Fig. 1, the system includes a shear blender 22. The remaining components of the system of Fig. 1 are similar to those of U.S. Patent No. 8,271,139 to Bellafiore et al., the contents of which are hereby incorporated by reference.

[0014] With reference to Fig. 1, a multi-stage blending system is indicated in general at 10. While this system will initially be discussed in terms of creating a buffer, it is to be understood that it may be used for accurately blending other types of liquid components. In