[0054] In a twentieth example of the present disclosure, which may be combined with the nineteenth example and any other example listed herein unless specified otherwise, the second rinsing procedure includes rinsing the NA^+ZP with water through the casing in a normal treatment flow direction.

[0055] In a twenty-first example of the present disclosure, which may be combined with the seventeenth example and any other example listed herein unless specified otherwise, regenerating the disinfected NA^+ZP includes at least one of flowing the sodium based alkaline solution or the sodium salt solution through the casing (i) at a flowrate of 0.1ml/min to 5ml/min, (ii) at a temperature from about 20°C to about 80°C, or (iii) until eluent sodium solution used to contact the NA^+ZP has a conductivity that equals or substantially equals a conductivity of incoming sodium solution.

[0056] In a twenty-second example of the present disclosure, which may be combined with the seventeenth example and any other example listed herein unless specified otherwise, the disinfecting agent (i) is a sodium based chemical, such as including NaOCl or (ii) includes isopropyl alcohol ("IPA").

[0057] In a twenty-third example of the present disclosure, which may be combined with the seventeenth example and any other example listed herein unless specified otherwise, the casing including the refurbished NA^+ZP is replaced within the sorbent cartridge with at least one new and different type of casing.

[0058] In a twenty-fourth example of the present disclosure, which may be combined with any other example listed herein unless specified otherwise, a sorbent cartridge includes (i) a housing sized and shaped to accept multiple sorbent cartridge casings in a desired order; (ii) a zirconium casing located within the housing; (iii) at least one additional casing located within the housing and selected from a second zirconium casing, a mechanical filter casing, an activated carbon and filter casing, a urease casing, or an anion exchange resin casing; and (iv) wherein each casing includes a seal that seals to another one of the casings or to the housing when the housing is closed for treatment, such that fluid traveling through the housing during treatment is prevented from leaking between the casings and between the housing and the casings.

[0058a] In one aspect of the present disclosure, there is provided a sorbent cartridge comprising: a housing sized and shaped to accept multiple sorbent cartridge casings in a desired order; a first zirconium casing including H^+ZP,

wherein the first zirconium casing is located within the housing; a second zirconium casing including $Na^{+}ZP$, wherein the second zirconium casing is located within the housing; at least one additional casing located within the housing and selected from a third zirconium casing, a mechanical filter casing, an activated carbon and filter casing, a urease casing, or an anion exchange resin casing; wherein each casing includes a seal that seals to another one of the casings or to the housing when the housing is closed for treatment, such that fluid traveling through the housing during treatment is prevented from leaking between the casings and between the housing and the casings; and wherein each of the first zirconium casing and the second zirconium casing includes a refurbished zirconium compound.

[0059] In a twenty-fifth example of the present disclosure, which may be combined with the twenty-fourth example and any other example listed herein unless specified otherwise, the housing is

CLAIMS

1. A sorbent cartridge comprising:

a housing sized and shaped to accept multiple sorbent cartridge casings in a desired order;

a first zirconium casing including H^+ZP, wherein the first zirconium casing is located within the housing;

a second zirconium casing including Na^+ZP, wherein the second zirconium casing is located within the housing;

at least one additional casing located within the housing and selected from a third zirconium casing, a mechanical filter casing, an activated carbon and filter casing, a urease casing, or an anion exchange resin casing;

wherein each casing includes a seal that seals to another one of the casings or to the housing when the housing is closed for treatment, such that fluid traveling through the housing during treatment is prevented from leaking between the casings and between the housing and the casings; and

wherein each of the first zirconium casing and the second zirconium casing includes a refurbished zirconium compound.

2. The sorbent cartridge of claim 1, wherein the housing is conically sized and shaped to accept multiple sorbent cartridge casings in a desired order and orientation.

3. The sorbent cartridge of claim 1, wherein the first zirconium casing and the second zirconium casing are located in parallel within the housing.

4. The sorbent cartridge of claim 1, wherein the first zirconium casing and the second zirconium casing are located in series within the housing.

5. The sorbent cartridge of claim 1, wherein the housing is closed at its exit end and openable at its inlet end via a removable cap.

6. The sorbent cartridge of claim 5, wherein the first zirconium casing is closer to the inlet end of the housing than the second zirconium casing.

7. The sorbent cartridge of claim 5, wherein the mechanical filter casing is closest to the inlet end, followed by the activated carbon and filter casing, the urease casing, the first zirconium casing, the second zirconium casing, the anion exchange resin casing, and the additional activated carbon and filter casing.

8. The sorbent cartridge of claim 1, wherein the at least one additional casing comprises the anion exchange resin casing, the mechanical filter casing, the activated carbon and filter casing, and the urease casing.

9. The sorbent cartridge of claim 8, wherein the sorbent cartridge comprises an additional activated carbon and filter casing.

10. The sorbent cartridge of claim 1, wherein the first zirconium casing, the second zirconium casing, and the at least one additional casing are conical in shape.