Claims

What is claimed is:

1. A wellbore tracer system comprising:

a first tracer comprising a first layer of a first type of metal ions and a second layer of a second type of metal ions, wherein the first tracer is positionable at a first production zone of a wellbore and is configured to release at least one of the first type of metal ions from the first layer or the second type of metal ions from the second layer into produced wellbore fluid in the wellbore, wherein the first layer is positioned atop the second layer within the first tracer;

a second tracer comprising the first type of metal ions, the second type of metal ions, or a third type of metal ions, wherein the second tracer is positionable at a second production zone of the wellbore that is a different from the first production zone, wherein the second tracer is configured to release at least one of the first type of metal ions, the second type of metal ions, or the third type of metal ions into the produced wellbore fluid; and

a detector positionable proximate to a surface of the wellbore and configured to analyze a sample of the produced wellbore fluid to identify the first production zone or the second production zone of the wellbore that is a source of the produced wellbore fluid based on determining which of the first type of metal ions, the second type of metal ions, or the third type of metal ions is present in the sample.

2. The system of claim 1, wherein the detector is positionable proximate to the surface of the wellbore to analyze the sample contemporaneously to acquiring the sample from the produced wellbore fluid.

3. The system of claim 1 , wherein the detector comprises:

an analysis chamber positionable to receive the sample from the wellbore;

an energy source usable to apply energy to the sample;

a spectrometer usable to detect a plurality of wavelengths from light waves emitting from the sample; and

an output device to output the plurality of wavelengths detected by the spectrometer.

4. The system of claim 3, wherein the detector further comprises additives usable to lower an electrical resistance of the sample, and wherein the energy source is a voltage or light source.

5. The system of claim 4, wherein the plurality of wavelengths output by the detector is usable to determine a flow rate of the produced wellbore fluid.

6. The system of claim 5, wherein at least one of the first tracer or the second tracer is positionable inside and at different sections of a tubing string in the wellbore.

7. The system of claim 5, wherein the first tracer and the second tracer are positionable and on a production tubular for releasing the first type of metal ions, the second type of metal ions, or the third type of metal ions, into the produced wellbore fluid.

8. The system of claim 5, wherein at least one of the first tracer or the second tracer is in a propping agent positionable in a hydraulic fracturing fluid usable in a hydraulic fracturing process in the wellbore, and wherein the detector is positionable proximate to the surface of the wellbore to analyze a sample of the hydraulic fracturing fluid.

9. A method comprising:

receiving, from a wellbore that includes at least two tracers, a sample of produced wellbore fluid, wherein a first tracer of the at least two tracers has a first layer of a first type of metal ions and a second layer of a second type of metal ions that are released into the produced wellbore fluid, wherein the first layer is positioned atop the second layer within the first tracer, the first tracer positioned at a first production zone of the wellbore and wherein a second tracer of the at least two tracers includes the first type of metal ions, the second type of metal ions, or a third type of metal ions that are released into the produced wellbore fluid, the second tracer positioned at a second production zone of the wellbore that is different from the first production zone;

applying, using a detector, energy to the sample;

detecting, using the detector, a plurality of wavelengths from light waves emitting from the sample with the energy applied; and

determining, using the detector, a presence of one or more of the types of metal ions in the sample from the plurality of wavelengths to identify the first production zone or the second production zone of the wellbore that is a source of the produced wellbore fluid based on

determining which of the first type of metal ions, the second type of metal ions, or the third type of metal ions is present in the sample.

10. The method of claim 9, wherein the detector is positioned proximate to a surface of the wellbore to analyze the sample substantially contemporaneously to acquiring the sample from the produced wellbore fluid.

11 . The method of claim 10, wherein the detector comprises:

an analysis chamber positioned to receive the sample from the wellbore;

an energy source usable to apply energy to the sample;

a spectrometer usable to detect the plurality of wavelengths from light waves emitting from the sample; and

an output device to output the plurality of wavelengths detected by the spectrometer.

12. The method of claim 11 , wherein the detector further comprises additives usable to lower an electrical resistance of the sample, and wherein the energy source is a voltage or light source.

13. The method of claim 12, wherein the plurality of wavelengths output by the detector is usable to determine a flow rate of the produced wellbore fluid.

14. The method of claim 13, wherein at least one of the at least two tracers is positioned inside and at different sections of a tubing string in the wellbore.

15. The method of claim 13, wherein the at least two tracers are positioned and on a production tubular in the wellbore for each releasing a type of metal ions into the produced wellbore fluid.

16. The method of claim 13, wherein at least one of the at least two tracers is in a propping agent positioned in a hydraulic fracturing fluid usable in a hydraulic fracturing process in the wellbore, and wherein the detector is positioned proximate to the surface of the wellbore to analyze a sample of the hydraulic fracturing fluid.

17. A tracer comprising:

a substrate positionable in a section of a wellbore; and

a metal ion source coupled to the substrate and comprising:

a first layer of a first type of of metal ions, wherein the first layer is positioned atop the second layer within the tracer; and

a second layer of a second type of metal ions,

wherein a plurality of metal ions comprises (i) the first type of metal ions and the second type of metal ions released by the tracer into produced wellbore fluid and (ii) the first type of metal ions, the second type of metal ions, or a third type of metal ions released by a second tracer into the produced wellbore fluid, and wherein the plurality of metal ions are detectable by a detector positionable proximate to a surface of the wellbore.

18. The tracer of claim 17, further comprising the metal ion source positionable within a binder, wherein the binder is a dissolvable material positionable to dissolve into the produced wellbore fluid, and wherein the metal ion source is positionable to release the first type of metal ions or the second type of metal ions into the produced wellbore fluid as the binder dissolves.

19. The tracer of claim 18, wherein the binder is a degradable material positionable to be degraded by the produced wellbore fluid, and wherein the metal ion source is positionable to release the first type of metal ions or the second type of metal ions into the produced wellbore fluid as the binder degrades.

20. The tracer of claim 17, further comprising a delay barrier positionable to coat the metal ion source to delay the release of the first type of metal ions or or the second type of metal ions.