What is claimed is:

1. A sand separator (100) including a separation chamber (106) and a drain (118), comprising:

a meter (120) in fluid communication with an interior of the separation chamber (106), wherein the meter (120) is configured to detect a liquid/solid interface;

meter electronics (128) in electrical communication with the meter (120) configured to receive a signal from the meter (120).

2. The sand separator (100) of Claim 1, wherein the meter (120) is located proximate a level in the separation chamber (106) that corresponds to a maximum desired level of the liquid/solid interface.

3. The sand separator (100) of Claim 1, wherein the meter (120) is a vibratory meter.

4. The sand separator (100) of Claim 2, wherein the vibratory meter is at least one of a densitometer and viscometer.

5. The sand separator (100) of Claim 2, wherein the vibratory meter further comprises:

a vibratory element (122);

a driver (124) configured to vibrate the vibratory element (122); and

a pickoff sensor (126) configured to detect vibration of the vibratory element (122).

6. The sand separator (100) of Claim 5, wherein the signal from the meter (120) is a signal strength of the pickoff sensor (126).

7. The sand separator (100) of Claim 6, wherein the signal strength is a voltage.

8. The sand separator (100) of Claim 5, wherein the signal from the meter (120) is a phase difference between a driver signal provided to the driver (124) and a pickoff signal received from the pickoff sensor (126).

9. The sand separator (100) of Claim 5, wherein the drain (118) is remotely actuatable.

10. The sand separator (100) of Claim 5, wherein the driver (124) comprises a *piezoelectric* element, and the pickoff sensor (126) comprises a *piezoelectric element.*

11. A sand separator (100) including a separation chamber (106) and a drain (118), comprising:

a vibratory fork densitometer (120) in fluid communication with an interior of the separation chamber (106) that is configured to indicate a liquid/solid interface;

a vibratory element (122) of the fork densitometer (120) that is configured to vibrate;

a driver (124) configured to receive a driver signal, wherein the driver (124) is further configured to vibrate the vibratory element (122);

a pickoff sensor (126) configured to detect a vibration of the vibratory element (122) and generate a pickoff signal that represents the vibration detected; and

meter electronics (128) in electrical communication with the densitometer (120) configured to provide the driver signal to the driver (124) and receive the pickoff signal from the densitometer (120).

12. The sand separator (100) of Claim 11, wherein the pickoff signal is a signal strength of the pickoff sensor (126).

13. The sand separator (100) of Claim 12, wherein the pickoff signal strength is a voltage.

14. The sand separator (100) of Claim 13, wherein the meter electronics (128) calculate a phase difference between the driver signal and the pickoff signal.

15. The sand separator (100) of Claim 11, further comprising a drain (118) configured to release material from the sand separator (100).

16. The sand separator (100) of Claim 15, wherein the drain (118) comprises a valve that is actuatable by the meter electronics (128).

17. A method of detecting a liquid/solid interface in a sand separator comprising the steps of:

vibrating a vibratory element located in a sand separator;

measuring a vibrational response of the vibratory element;

comparing the vibrational response to a reference value; and

detecting a level of the liquid/solid interface in the sand separator.

18. The method of detecting a liquid/solid interface in a sand separator of claim 17, further comprising the step of:

indicating the presence of the liquid/solid interface in the sand separator if an intensity of the vibrational response is below a predetermined threshold.

19. The method of detecting a liquid/solid interface in a sand separator of claim 17, further comprising the step of:

indicating the presence of the liquid/solid interface in the sand separator if a phase difference between the vibrational response and the reference value passes a predetermined threshold.

20. The method of detecting a liquid/solid interface in a sand separator of claim 17, further comprising the step of:

emptying solids from the sand separator if the liquid/solid interface exceeds a predetermined level.

21. The method of detecting a liquid/solid interface in a sand separator of claim 20, wherein the step of emptying solids from the sand separator if the liquid/solid interface exceeds a predetermined level further comprising the step of:

opening a drain of the sand separator.

22. A method of detecting a liquid/solid interface in a sand separator comprising the steps of:

placing a vibratory meter in a sand separator;

vibrating a vibratory element of the vibratory meter at a resonant frequency of the vibratory element and fluid surrounding the vibratory element;

receiving a signal from a pickoff sensor of the vibratory sensor; and

detecting a presence of the liquid/solid interface.

23. The method of detecting a liquid/solid interface in a sand separator of claim 22, further comprising the step of:

maintaining a fixed phase difference between a drive signal and a pickoff signal.

24. The method of detecting a liquid/solid interface in a sand separator of claim 23, wherein the fixed phase difference is approximately 45°.

25. The method of detecting a liquid/solid interface in a sand separator of claim 22, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating when the vibratory meter is unable to maintain the fixed phase difference between the drive signal and the pickoff signal.

26. The method of detecting a liquid/solid interface in a sand separator of claim 22, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating when the phase difference between the drive signal and the pickoff signal fluctuates from the fixed phase difference by greater than a predetermined amount.

27. The method of detecting a liquid/solid interface in a sand separator of claim 22, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating when the vibratory element ceases to vibrate.

28. The method of detecting a liquid/solid interface in a sand separator of claim 22, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating the presence of the liquid/solid interface in the sand separator if an intensity of the vibrational response is below a predetermined threshold.

29. The method of detecting a liquid/solid interface in a sand separator of claim 28, wherein the step of detecting the presence of the liquid/solid interface wherein the intensity comprises a voltage.

30. The method of detecting a liquid/solid interface in a sand separator of claim 22, further comprising the step of:

emptying solids from the sand separator if the liquid/solid interface is detected.

31. The method of detecting a liquid/solid interface in a sand separator of claim 22, further comprising the step of:

opening a drain of the sand separator.

What is claimed is:

1. A sand separator (100) including a separation chamber (106) and a drain (118), comprising:

a vibratory element (122);

a driver (124) configured to vibrate the vibratory element (122);

a pickoff sensor (126) configured to detect vibration of the vibratory element (122);

a meter (120) in fluid communication with an interior of the separation chamber (106), wherein the meter (120) is configured to detect a liquid/solid interface; and

meter electronics (128) in electrical communication with the meter (120) configured to receive a signal from the meter (120), wherein the signal from the meter (120) is a phase difference between a driver signal provided to the driver (124) and a pickoff signal received from the pickoff sensor (126), and wherein meter electronics (118) are configured to indicate when the vibratory meter is unable to maintain the fixed phase difference between the drive signal and the pickoff signal.

2. The sand separator (100) of Claim 1, wherein the meter is at least one of a densitometer and viscometer.

3. The sand separator (100) of Claim 1, wherein the signal from the meter (120) is a signal strength of the pickoff sensor (126).

4. The sand separator (100) of Claim 3, wherein the signal strength is a voltage.

5. The sand separator (100) of Claim 1, wherein the drain (118) is remotely actuatable.

6. The sand separator (100) of Claim 1, wherein the driver (124) comprises a piezoelectric element, and the pickoff sensor (126) comprises a piezoelectric element.

7. A sand separator (100) including a separation chamber (106) and a drain (118), comprising:

a vibratory fork densitometer (120) in fluid communication with an interior of the separation chamber (106) that is configured to indicate a liquid/solid interface;

a vibratory element (122) of the fork densitometer (120) that is configured to vibrate;

a driver (124) configured to receive a driver signal, wherein the driver (124) is further configured to vibrate the vibratory element (122);

a pickoff sensor (126) configured to detect a vibration of the vibratory element (122) and generate a pickoff signal that represents the vibration detected; and

meter electronics (128) in electrical communication with the densitometer (120) configured to provide the driver signal to the driver (124) and receive the pickoff signal from the densitometer (120).

8. The sand separator (100) of Claim 7, wherein the pickoff signal is a signal strength of the pickoff sensor (126).

9. The sand separator (100) of Claim 8, wherein the pickoff signal strength is a voltage.

10. The sand separator (100) of Claim 9, wherein the meter electronics (128) calculate a phase difference between the driver signal and the pickoff signal.

11. The sand separator (100) of Claim 7, further comprising a drain (118) configured to release material from the sand separator (100).

12. The sand separator (100) of Claim 11, wherein the drain (118) comprises a valve that is actuatable by the meter electronics (128).

13. A method of detecting a liquid/solid interface in a sand separator comprising the steps of:

vibrating a vibratory element located in a sand separator;

measuring a vibrational response of the vibratory element;

comparing the vibrational response to a reference value;

detecting a level of the liquid/solid interface in the sand separator; and

indicating the presence of the liquid/solid interface in the sand separator if a phase difference between the vibrational response and the reference value passes a predetermined threshold.

14. The method of detecting a liquid/solid interface in a sand separator of claim 13, further comprising the step of:

indicating the presence of the liquid/solid interface in the sand separator if an intensity of the vibrational response is below a predetermined threshold.

15. The method of detecting a liquid/solid interface in a sand separator of claim 13, further comprising the step of:

emptying solids from the sand separator if the liquid/solid interface exceeds a predetermined level.

16. The method of detecting a liquid/solid interface in a sand separator of claim 15, wherein the step of emptying solids from the sand separator if the liquid/solid interface exceeds a predetermined level further comprising the step of:

opening a drain of the sand separator.

17. A method of detecting a liquid/solid interface in a sand separator comprising the steps of:

placing a vibratory meter in a sand separator;

vibrating a vibratory element of the vibratory meter at a resonant frequency of the vibratory element and fluid surrounding the vibratory element;

receiving a signal from a pickoff sensor of the vibratory sensor;

detecting a presence of the liquid/solid interface;

maintaining a fixed phase difference between a drive signal and a pickoff signal; and

indicating when the vibratory meter is unable to maintain the fixed phase difference between the drive signal and the pickoff signal.

18. The method of detecting a liquid/solid interface in a sand separator of claim 17, wherein the fixed phase difference is approximately 45°.

19. The method of detecting a liquid/solid interface in a sand separator of claim 17, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating when the phase difference between the drive signal and the pickoff signal fluctuates from the fixed phase difference by greater than a predetermined amount.

20. The method of detecting a liquid/solid interface in a sand separator of claim 17, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating when the vibratory element ceases to vibrate.

21. The method of detecting a liquid/solid interface in a sand separator of claim 17, wherein the step of detecting the presence of the liquid/solid interface further comprises the step of:

indicating the presence of the liquid/solid interface in the sand separator if an intensity of the vibrational response is below a predetermined threshold.

22. The method of detecting a liquid/solid interface in a sand separator of claim 21, wherein the step of detecting the presence of the liquid/solid interface wherein the intensity comprises a voltage.

23. The method of detecting a liquid/solid interface in a sand separator of claim 17, further comprising the step of:

emptying solids from the sand separator if the liquid/solid interface is detected.

24. The method of detecting a liquid/solid interface in a sand separator of claim 17, further comprising the step of:

opening a drain of the sand separator.