CLAIMS:

1. A system, comprising:

an ultrasonic flow meter, comprising:

a conduit comprising a conduit wall disposed about an internal passage, wherein the conduit is configured to flow a fluid through the internal passage;

a housing disposed about the conduit to define a fluid chamber about the conduit, wherein the fluid chamber is in fluid communication with the conduit; and

a first ultrasonic transducer disposed in the fluid chamber, wherein the first ultrasonic transducer is coupled to the conduit.

2. The system of claim 1, wherein the fluid chamber is configured to balance a fluid pressure on the conduit wall in the internal passage and the fluid chamber.

3. The system of claim 1, wherein the fluid chamber is configured to contain the fluid in a substantially static state to facilitate filtering of acoustic noise.

4. The system of claim 1, wherein the first ultrasonic transducer comprises a first annular ultrasonic transducer at least partially encapsulated in an acoustic isolative material.

5. The system of claim 4, wherein the acoustic isolative material comprises polyether ether ketone (PEEK).

6. The system of claim 1, comprising a second ultrasonic transducer disposed in the fluid chamber, wherein the second ultrasonic transducer is coupled to the conduit, and the first and second ultrasonic transducers are configured to communicate ultrasonic sound waves between one another.

7. The system of claim 6, comprising an acoustic isolative structure disposed outside of the conduit in the fluid chamber at least partially between the first and second ultrasonic transducers.

8. The system of claim 7, wherein the acoustic isolative structure comprises a polyether ether ketone (PEEK) structure.

9. The system of claim 7, wherein the first ultrasonic transducer comprises a first annular ultrasonic transducer disposed about the conduit in the fluid chamber at a first position along a longitudinal axis of the conduit, the second ultrasonic transducer comprises a second annular ultrasonic transducer disposed about the conduit in the fluid chamber at a second position along the longitudinal axis of the conduit, the acoustic isolative structure comprises an annular acoustic isolative structure disposed about the conduit in the fluid chamber at a third position along the longitudinal axis of the conduit, and the third position is disposed longitudinally between the first and second positions.

10. The system of claim 9, wherein the first annular ultrasonic transducer is at least partially encapsulated in a first polyether ether ketone (PEEK) material, the second annular ultrasonic transducer is at least partially encapsulated in a second polyether ether ketone (PEEK) material, and the annular acoustic isolative structure comprises a third polyether ether ketone (PEEK) material.

11. The system of claim 1, comprising a mineral extraction component having the ultrasonic flow meter.

12. ~~An apparatus~~A system, comprising:

a chemical-injection management system of a sub-sea oil and gas extraction system, comprising:

a flow path having an inlet and an outlet; and

an ultrasonic flow meter disposed in the flow path between the inlet and the outlet, wherein the ultrasonic flow meter comprises:

a conduit;

a housing disposed about the conduit to define a pressurized fluid chamber about the conduit; and

a first ultrasonic transducer disposed in the pressurized fluid chamber.

13. The system of claim 12, wherein the pressurized fluid chamber is configured to at least substantially balance fluid pressure internal and external to the conduit via the pressurized fluid chamber, and the pressurized fluid chamber is configured to contain a fluid in a substantially static state to facilitate filtering of acoustic noise.

14. The system of claim 12, wherein the first ultrasonic transducer comprises a first annular ultrasonic transducer encapsulated in an acoustic isolative material.

15. The system of claim 12, comprising a second ultrasonic transducer disposed in the fluid chamber, wherein the first and second ultrasonic transducers are configured to communicate ultrasonic sound waves between one another, and an acoustic isolative structure is disposed between the first and second ultrasonic transducers.

16. The system of claim 15, wherein the first ultrasonic transducer comprises a first PEEK encapsulated annular ultrasonic transducer disposed about the conduit at a first position along a longitudinal axis of the conduit, the second

ultrasonic transducer comprises a second PEEK encapsulated annular ultrasonic transducer disposed about the conduit at a second position along the longitudinal axis of the conduit, the acoustic isolative structure comprises an annular acoustic isolative structure disposed about the conduit at a third position along the longitudinal axis of the conduit, the third position is disposed longitudinally between the first and second positions.

17. The system of claim 12, wherein the flow meter is capable of fluid measurement in pressures greater than 10,000 pounds per square inch.

18. The system of claim 17, wherein the chemical-injection management system comprises a motorized valve disposed in the flow path between the inlet and the outlet, and a controller communicatively coupled to the ultrasonic flow meter and the motorized valve, wherein the controller is configured to control a parameter of fluid flow through the flow path based on a feedback signal from the ultrasonic flow meter.

19. A system, comprising:

an ultrasonic flow meter, comprising:

a conduit surrounding a fluid flow path;

a first ultrasonic transducer;

a second ultrasonic transducer, wherein the first and second ultrasonic transducers are configured to measure a fluid flow along the fluid flow path;

a static fluid chamber at least substantially isolated from the fluid flow path, wherein the first and second ultrasonic transducers are disposed in the static fluid chamber; and

an acoustic damping material disposed in the static fluid chamber outside of the conduit, wherein the acoustic damping material is disposed between the first and second ultrasonic transducers.

20. The system of claim 19, wherein the system is configured to at least substantially balance a first fluid pressure in the static fluid chamber with a second fluid pressure along the fluid flow path.

21. The system of claim 20, comprising a pressure balancing member disposed between the conduit and the static fluid chamber, wherein the pressure balancing member is configured to move to balance the first fluid pressure in the static fluid chamber with the second fluid pressure along the fluid flow path.

22. The system of claim 21, wherein the pressure balancing member comprises a bellows, a diaphragm, a piston-cylinder assembly, or any combination thereof.

23. The system of claim 19, wherein the acoustic damping material comprises a polyether ether ketone (PEEK) material.

24. The system of claim 19, wherein the acoustic damping material comprises a plurality of particles disposed in the static fluid chamber.