**What is claimed is:**

1. A system for recovering desired materials from the seabed comprising:
a surface vessel;
an excavator on the seabed adapted to generate an ore slurry containing a desired material from the seabed;
a lift system connected to the excavator and the surface vessel, the lift system adapted to convey the ore slurry from the from the excavator to a lift system output on the surface vessel;
a feed preparation circuit on the surface vessel and connected to the lift system output, the feed preparation circuit adapted to process the ore slurry to produce a prepared ore slurry consisting essentially of seawater and solid particles within a desired size range;
a leaching circuit on the surface vessel and connected to the feed preparation circuit, the leaching circuit adapted to dissolve the desired material from the ore slurry using a lixiviant to produce a pregnant leach slurry;
a recovery circuit on the surface vessel and connected to the leaching circuit, the recovery circuit adapted to recover the desired material from the pregnant leach slurry using an ion exchange resin to produce a loaded resin and a leach waste material;
a residue treatment circuit on the surface vessel and connected to the recovery circuit, the residue treatment circuit adapted to neutralize the leach waste material;
a resin stripping circuit on the surface vessel and connected to the recovery circuit, the resin stripping circuit adapted to strip the desired materials from the loaded resin using an eluant to produce a pregnant eluant and a stripped resin;
a precipitation circuit on the surface vessel and connected to the resin stripping circuit; the precipitation circuit adapted to precipitate the desired material from the pregnant eluant using a precipitant to produce the desired material and a barren eluant.

2. The system for recovering desired materials from the seabed of claim 1, further comprising:
a lixiviant recycling circuit on the surface vessel and connected to the recovery circuit, the lixiviant recycling circuit adapted to remove solid waste materials from the leach waste material to produce a barren leach solution and a thickened leach waste material;
wherein the barren leach solution is reused in the leaching circuit and the thickened waste material is fed to the residue treatment circuit and wherein substantially all of the stripped resin is reused as the ion exchange resin in the recovery circuit.

3. The system for recovering desired materials from the seabed of claim 2, wherein the feed preparation circuit further comprises a dewatering circuit adapted to remove excess water and fine particulates from the prepared ore slurry.

4. The system for recovering desired materials from the seabed of claim 2, further comprising a dewatering circuit on the excavator; and
a subsea feed preparation circuit on the excavator, the subsea feed preparation circuit adapted to process the ore slurry to produce a prepared ore slurry consisting essentially of seawater and solid particles within a desired size range.

5. The system for recovering desired materials from the seabed of claim 2, wherein the leaching circuit further comprises:
a series of leaching tanks arranged so that the prepared ore solution can move from one leaching tank to the next from a first leaching tank to a last leaching tank; and
agitators in the series of leaching tanks.

6. The system for recovering desired materials from the seabed of claim 5, wherein the leaching tanks have baffles adapted to reduce free surface effects.

7. The system for recovering desired materials from the seabed of claim 5, wherein the leaching tanks have movable tops adapted to limit free surface effects by floating on the tank contents.

8. The system for recovering desired materials from the seabed of claim 2, wherein the lixiviant is a mineral acid.

9. The system for recovering desired materials from the seabed of claim 2, wherein the lixiviant is an organic acid.

10. The system for recovering desired materials from the seabed of claim 2, wherein the lixiviant is a combination of a mineral acid and an organic acid.

11. The system for recovering desired materials from the seabed of claim 2, wherein the ion exchange resin comprises resin beads larger than the substantially all of the particles in the pregnant leach slurry, and the recovery circuit comprises:

a series of resin contact tanks arranged so that the pregnant leach slurry can move from one resin contact tank to the next from a first resin contact tank to a last resin contact tank;

agitators in the series of resin contact tanks.

12. The system for recovering desired materials from the seabed of claim 11, wherein the recovery circuit comprises a resin in pulp system.

13. The system for recovering desired materials from the seabed of claim 11, wherein the loaded resin and leach waste material are mechanically separated.

14. The system for recovering desired materials from the seabed of claim 11, wherein the loaded resin and leach waste material are separated using a screen.

15. The system for recovering desired materials from the seabed of claim 2, wherein the residue treatment circuit further comprises:

a series of residue treatment tanks arranged so that the leach waste material can move from one residue treatment tank to the next from a first residue treatment tank to a last residue treatment tank;

a residue treatment injector adapted to add a residue treatment agent to the series of residue treatment tanks;

agitators in the series of residue treatment tanks.

16. The system for recovering desired materials from the seabed of claim 2, wherein the resin stripping circuit further comprises:

a series of stripping tanks arranged so that the eluant can move from one stripping tank to the next from a first stripping tank to a last stripping tank; and

agitators in the series of stripping tanks.

17. The system for recovering desired materials from the seabed of claim 2, wherein the precipitation circuit further comprises a dewatering system to separate the desired material from the barren eluant.

18. The system for recovering desired materials from the seabed of claim 2, wherein the precipitant is oxalic acid.

19. The system for recovering desired materials from the seabed of claim 2, wherein the precipitant is sodium carbonate.

20. The system for recovering desired materials from the seabed of claim 2, further comprising a bulk bagging system connected to the precipitation circuit, the bulk bagging system adapted to bag the desired materials for transport.