

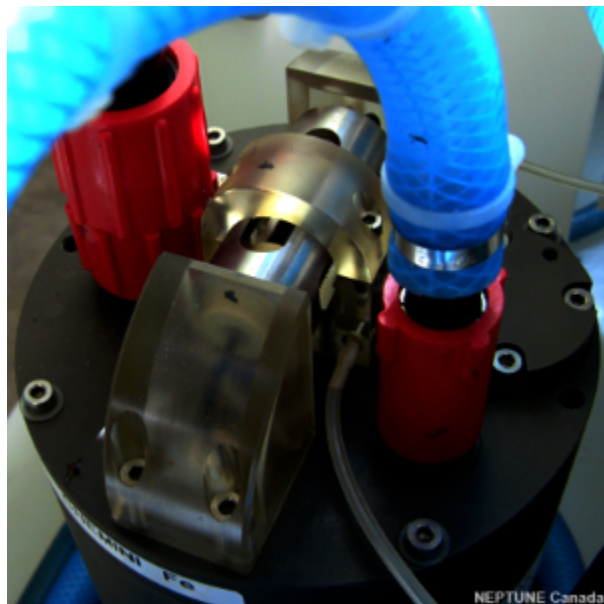
Iron Sensors

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Dissolved Minerals at Mid-Ocean Ridges

Hydrothermal vents that form along mid-ocean ridges are fissures from which geothermally heated water flows. The water that flows out of vents is mostly seawater drawn into the system through faults, porous sediments, and volcanic rocks. As the cool seawater moves through the sediment and rock toward the hot magma, the water becomes superheated (300-400 C) and rich in dissolved elements (such as sulphur, iron, zinc and copper) from the ocean crust. When the hot effluent encounters the cold, ambient seawater (~2 degrees C) minerals precipitate from the element-rich vent water. As some vent sites, black smokers form; these are found in areas where the effluent is very hot (~350 C) precipitating iron sulphides, giving it a dark colour and forming sulphide-mineral deposits (NEPTUNE Canada: An Invitation to Science, 2012).



(Click the picture to enlarge it.)