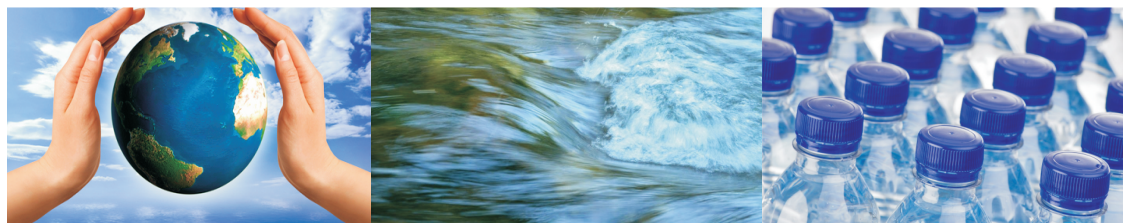
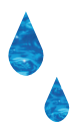


# Earths Evolution Imprinted in Water

The purpose of this newsletter is to raise awareness about water quality and need to pass on a healthy planet to future generations.



**Water** is old as the universe and is constantly transformed and recycled during its journey through time and space. Like our earth, water has its origins in the birth and death of the stars.

Pure water comprises a mixture of gases (hydrogen, oxygen), however many elements (ions, metals, nutrients, bacteria, particles etc) are included due to the reactivity of water with other gases, liquid, & solids. The elements make an imprint on the water during contact like a fingerprint which can be recognised using laboratory techniques.

Scientists inform us that water on Earth is derived from the rocky-ice asteroids that entered our atmosphere. Earth is the only planet in the solar system with water in 3 phases (ice, water, vapour) and diverse life forms.

Water is an extraordinary and dynamic molecule able to hold complex imprints (physical, chemical, biological, radioactive) from all that it touches and infiltrates. Scientists know that water consists of individual molecules ( $1.67 \times 10^{21}$  in a single drop) which are in constant communication with each other and the environment. As water circulates around the planet, it is shared amongst humans, animals and plants alike, in an ongoing exchange of life sustaining elements.

With powerful analytical technology, scientists can peer into the atoms/isotopes of water and determine the origin, environmental conditions, and its composition (e.g. ancient CO<sub>2</sub> levels in deep icebergs), minute changes in the ocean, radioactive contamination from distant nuclear reactors, atmospheric impacts from weapons testing, or even coffee consumption habits or viruses by testing of sewerage outflows.

Monitoring for environmental and human health around the planet indicates that water quality is impacted by many industrial-domestic chemicals, micro-plastics and the astronomical stream of waste @ 2.2 billion tonnes produced annually.

Prior to the industrial revolution, the majority of human activities produced biodegradable materials & byproducts which were readily broken down. With the global production of synthetic chemicals and persistent pollutants (PCB, PFAS, PAHs, heavy metals) the breakdown and biodegradation is limited leaving the toxic residues only to be diluted in the soil, water ways or ocean.

We know that the composition of water relates to the quality of the earth and air through which it passes. What scientists need to pass onto our communities and next generation is that water pollution can occur easily and contaminants can bio-accumulate in the food chain and spread into drinking water supplies.

Environmental stewardship is required on a global scale to ensure that the life giving properties of water is protected for current and future generations.

**Water** is within all life forms and connects us directly to the planet. Water does not sit in the background of our civilisation, but rests deeply within the core and heart of our existence, growth and economic prosperity.



**Water analyses can be used to monitor the health of water ways and ocean.**

