

Well Flow Management

Fluids Sampling and Analysis

H₂ Extractor - Natural Hydrogen Sampling Tool

Expro's H₂ Extractor soil vapor sampling and analysis system combines shallow sub-surface percussive drilling with integrated measurements and an inline sample capture system for evaluation of micro-seepages and natural accumulations of hydrogen and other gases.

Following drilling to target depth, sample is drawn up by an integrated pump, through the drill string, minimizing damage to the bore and preventing ingress from non-target zones. Analysis is performed inline with simultaneous measurement of five compounds; in addition to hydrogen, measurement of other parameters ensures representative samples are collected.

Expro's patent pending sampling system forms an integral part of the process, capturing inline samples for offsite analysis.

Features and benefits

- Non-rotary drilling reduces compositional degradation of the target gases
- Extended depth up to 12ft
- Inline measurement system provides real time measurement of H₂, CH₄, CO₂, O₂, and H₂S
- Can be combined with other onsite measurements to extend capabilities
- Sample capture system allows optimized sampling to maximize target gases
- Rapid deployment, setup and operation allows multiple sites to be assessed in a single day, creating a detailed survey of localized accumulations
- Small footprint for easy mobilization and onsite handling

Applications

- Prospecting for surface indications of natural hydrogen accumulations
- Identification of microseepages
- Depth based correlations
- Collection of samples for isotopic analysis to confirm origin
- Wider environmental applications include geothermal prospecting and landfill / biogas monitoring using complementary analysis e.g. radon



Specifications

Parameter	Range
Depth	0 – 12 ft
Hydrogen (H ₂)	0 – 2000 ppm, +/- 5 ppm or 5%
Methane (CH ₄)	0 – 100%, +/- 0.3% or 3%
Oxygen (O ₂)	0 – 25%, +/- 0.2% absolute
Hydrogen Sulphide (H ₂ S)	0 – 2000 ppm, +/- 5 ppm or 5%
Carbon Dioxide (CO ₂)	0 – 100%, +/- 0.3% or 3%
Sample Volume	150 – 500cc
Weight	15Kg
Dimensions	Length: 58 cm Width: 38 cm Height: 41 cm