



PLATFORM · LOW-TO-MID TEMPERATURE

ThermaCycle®

Adaptive thermal, engineered for control**Adaptive Heat. Every Mechanism. One Platform.**

REGISTERED · PATENT PENDING

ThermaCycle® is ERG's next-generation platform for low- to mid-temperature in situ thermal remediation: a closed-loop, recirculating groundwater heating system engineered to adapt dynamically to subsurface conditions and employ the full range of low- to mid-temperature (<70 °C) remediation mechanisms on a single unified equipment platform.

90–150°F

Subsurface Temperature

100–180°F

Injection Temperature

5–50 gpm

Adjustable Flow Range

7

Mechanisms, One Platform

THE THERMAL MECHANISM STACK**One platform. Seven mechanisms. Zero system redesigns.**

- Heat-enhanced biodegradation
- Accelerated hydrolysis (susceptible VOCs)
- Thermally enhanced desorption & extraction
- NAPL mobilization
- In situ chemical oxidation / reduction
- Co-solvent & surfactant flushing
- Biological amendment & bioaugmentation

OPERATING ENVELOPE · 90–150 °F SUBSURFACE

**● Closed-Loop Architecture**

Recirculating groundwater heating; heat and amendments share one loop. The same wellfield carries treatment from source zone through polishing.

● Multi-Mechanism Activation

Biodegradation, hydrolysis, desorption, and mobilization. Integrated inline dosing of co-solvents, surfactants, amendments, and oxidants.

● Built to Evolve

Flow, temperature, and dosing adjust as the remedy progresses, so mechanisms track the remedial trajectory. The backbone of thermally enhanced combined remedies.

● Existing System Optimization

Existing bioremediation, groundwater recirculation, pump and treat, DPE, or MPE systems are optimized by integrating ThermaCycle® into the existing wellfield and process train, taking stalled sites to closure or expediting the timeline to MNA.

BEST APPLIED WHEN

- Lithology has higher K-value (1×10^{-4} to 1×10^{-2})
- Hydraulic control is critical
- Bioremediation can be accelerated
- Timeline has more flexibility, and project costs matter most
- Conventional high-temperature ISTR is not the right fit for the site

A THERMAL ENHANCEMENT TO CONVENTIONAL REMEDIES**PUMP & TREAT****Enhanced Mass Recovery**

Heat increases solubility and desorption rates: more mass per gallon pumped and shorter system runtime.

IN SITU BIOREMEDIATION**Enhanced Biodegradation**

Raising groundwater to approximately 30–40 °C accelerates biodegradation of chlorinated VOCs and petroleum hydrocarbons while maintaining the existing microbial community.

ISCO**Thermally Activated Persulfate**

Elevated temperature activates persulfate without iron catalyst or pH adjustment, improving radical yield at lower oxidant loading.

HYDROLYSIS & ABIOTIC**Enhanced Abiotic Degradation**

Recirculation delivers heat to the target interval with better contact and hydraulic control, accelerating hydrolysis and abiotic degradation.

**WWW.1ERG.COM**

ENGINEERED THERMAL SYSTEMS · MEASURABLE PERFORMANCE · LOWER LIFECYCLE COSTS

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