

# *UST SITE DEMONSTRATION*

## *Southern Indiana*

A 30 day demonstration of the ART In-Well Technologies was performed by ATC Associates, Inc. to determine the efficacy of the ART Technologies in treating soil and groundwater impacted with petroleum hydrocarbons at a retail petroleum station in south central Indiana. The rental option consisting of leasing the ART Technologies and an associated blower/compressor system was selected by the client to minimize costs associated with the demonstration study.

**Site Description:** The Subsurface at the site consists of silty clays to a depth of 7 to 18 feet below grade surface (bgs) with sandy soils of an apparent fluvial nature to 30 feet. Depth to groundwater at the site is approximately 14 feet bgs. The hydrocarbon plume encompasses an area of approximately 100 feet by 200 feet. The hydraulic conductivity is estimated to be  $10^{-2}$  cm/sec in the sandy soils and  $10^{-7}$  cm/sec in the silty clays.

The ART Technologies was installed in one existing 4-inch recovery well. One of the challenges included the existing remedial well extending only 5.5 feet below the groundwater table. The initial operational parameters included adjustments to vacuum and air pressure settings to accommodate the short water column and promote increases to the radius of influence (ROI) and remedial efficacy of the ART Well Technologies. All data collections and management were performed by site consultant.

**Summary:** *Within 30 days of operation in a single ART Well, benzene concentrations were reduced by up to 86 % in wells as far as 44 feet from the ART remedial well. MTBE concentrations were reduced by as much as 98%. Dissolved oxygen increased in nearby data collection points – promoting biodegradation. Additionally, soil vapor extraction (SVE) influence was detected in nearby monitoring points, eliminating the potential of vapor intrusion along with vadose zone treatment. The ART Technologies proved effective in greatly reducing petroleum hydrocarbon concentrations in a very short period of time and is deemed efficient in achieving project objectives.*

Monitoring Point (Feet from ART Well)	Benzene			MTBE		
	Baseline	30 Days	% Reduction	Baseline	30 Days	% Reduction
MW-8 (8' to ART Well)	293	40	86%	207	<4	= or > 98%
MW-1 (13' to ART Well)	91	41	55%	83	<4	= or > 95%
MW-2 (44' to ART Well)	179	54	70%	47	<40	= or > 15%

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**ART** For additional information about the ART Technologies, please visit our website at [www.artinwell.com](http://www.artinwell.com)

