

# Petroleum Retailer Free Product Recovery Atlanta, Georgia

## INTRODUCTION AND BACKGROUND

A petroleum retailer released gasoline from one of their underground storage tanks. Although the extent of gasoline-impact was delineated, a persistent “pocket” of free-phase petroleum remained beneath the subject property. As required by statute, measurable “free-phase” petroleum product must be removed if it exceeds 1/100 of a foot in thickness.

Traditionally, free-phase product has been removed via:

- Liquid recovery system (requiring semi-permanent equipment installation, construction trenching/utility activities, monthly electric utility, etc.)
- High-vacuum recovery events (costly requiring frequent events using a high-vacuum truck and personnel with large volumes of recovered water to be disposed of)
- Manual bailing (costly on labor and requiring frequent trips to the site)
- Passive petroleum skimmers (less costly but only practical when very limited quantities of free product are present)

## PROBLEM STATEMENT

The methods listed require either significant equipment costs or frequent labor hours to reach the desired result, which is free-phase product removal.

## STRATEGY & SOLUTION

Identify an alternative technology capable of:

- Less construction
- Lower equipment cost up-front with fewer moving parts
- No electric utility usage (and thereby no power outage issues)

With these requirements, Sierra identified and installed the Pump-on-Demand® (POD) free-product recovery system in two monitoring wells located in the center of the free-phase product area at the property. This recovery system uses free-product sensors that identify free product on top of



groundwater and collect it via a carbon dioxide gas-driven pump. The pump then transfers the free-phase product to a temporary holding tank for containment. Due to the minimal access necessary to connect each well to the recovery system, Sierra was able to limit concrete cutting to a 4-inch-wide trench less than 90 feet long. Estimates of recovery costs (based upon varying carbon dioxide gas rates) indicate \$0.02 to \$0.03 per gallon recovered, which is extremely cost effective. In addition, no electric utilities are required for operation and the system runs unattended around the clock, every day of the year with no impact by weather conditions.

#### **RESULT**

Finding a creative solution provided a less-costly, free-product recovery solution that was able to achieve all goals.