



CASE STUDY

#0116

GATE 1204 PILOT, SEBRING, FL

SITE OVERVIEW

Active gas station in Sebring, FL
 FDEP Site Number: 8629375

CONTAMINATION

Gasoline contaminants in ground water

Two site features that have long been a detriment to chemical oxidant treatments at sites have recently been overcome by EN Rx. These are free product treatment and shallow water tables. Generally, chemical oxidants are so violently reactive to free product that it becomes dangerous to both workers and site peripherals, not to mention it may be counter productive. Shallow water tables generally create a situation where short-circuiting is certain to happen and it becomes difficult to inject the needed quantities into the ground. The Gate 1204 site was treated using our Feedback Optimized Continuous Injection System (FOCIS) which allows the slow injection of activated reagent which can eliminate mounding and short-circuiting and also control cash flow by not requiring large initial chemical injections. The system is only possible because of our proprietary activation which lasts more than 90 days on the surface without becoming dangerous. Similarly, it is the same activator that allows us to attack free product level concentrations with minimal or no measurable heat generation.

HISTORY

- Leaking Underground Storage Tank (UST) had contaminated an area at this active gas station.
- Shallow water table (1 -2 ft) created a difficult cleanup scenario.
- Free Product (FP) was measured in wells since 2007 (apparent discharge) in three wells around tank farm.

PRE-CLEAN DATA

- In addition to the wells with measurable free product, 7 wells were above NADCs (2 are deep wells, 24' and 27' bls).
- The soils are sandy with some silts in the shallow zones.
- BTEX contaminant mass is difficult to estimate based on the immeasurable amount of free product around the tank farm.

REMEDIAL ACTIVITIES

- The pilot injection lasted 3 months and inject a dosage of 14,000 pounds of oxidant followed by a full scale application of 20,000 pounds.
- FOCIS operated efficiently (<5 A, power consumption).
- Treatment in the tank farm was completed safely.
- Massive reductions are noted across the site, even great distances from the treatment area.

Case Study 0117: Groundwater Treatment Results

BTEX Concentration	MW-3	MW-4	MW-16	MW-18	MW-19	MW-26	MW-35	MW-36	DMW-1	DMW-4
Pre (Jan 2011)	1.4 U *	292 *	34.4 **	FP	1906**	163*	280	1952	21	179
Post (Dec 2011)	174	413	332	25,000	23,900	56	8.5	0.9	6.3	7.4
Result Jan 2016	<GCTLs	<GCTLs	Benz 19	459	Benz 2.2	<GCTLs	<GCTLs	<GCTLs	<GCTLs	<GCTLs

* Historically, much higher results (water table fluctuation may have caused this occurrence).

** Historically (only one event prior to baseline) this location measured free product. The result is questionable.