

## Electron Donor Injection

<b>Location</b>	Brownfields Site in New Jersey, USA
<b>Operator</b>	Local Direct Push Contractor
<b>Formation</b>	Unconsolidated Sandy Silts over Dense Clay
<b>Aquifer Target</b>	Dissolved Chlorinated Solvent Contaminants
<b>Application</b>	Reductive Dechlorination via Electron Donor Injection
<b>Tool used</b>	Surface Deployed Hornet Tool
<b>Date installed</b>	October 2007 to November - 2007

### Introduction

Primawave, a proprietary technology of Wavefront was used to maximize injection efficacy and realize substantial project efficiency.

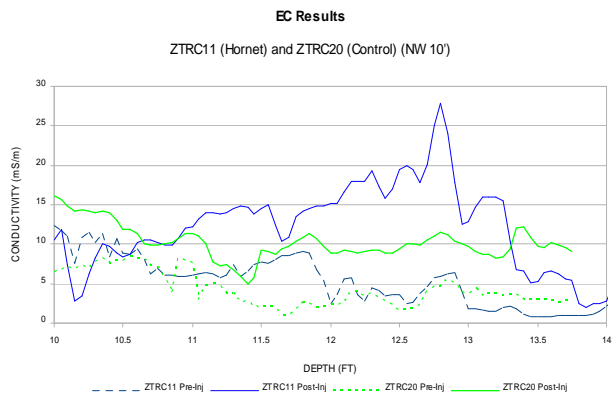
### Injection Issue

At this former industrial site in New Jersey, high chlorinated and non-chlorinated VOC concentrations required treatment. Due to high community interest, and the proposed redevelopment of the site into a residential use, the proposed schedule called for rapid treatment of the contamination, with minimal impacts to adjacent property owners.

### Primawave Installation

The Primawave Hornet Tool was attached to the top of direct push rod strings, and the commercial remedial product was pumped through the Hornet Tool, down through the rods, and out into the aquifer.

An Electrical Conductivity (EC) probe was used to track the electron donor delivery both pre- and post-injection. The results of the EC survey indicated that Primawave dramatically increased the distribution of the electron donor product in the subsurface.



### Results

The successful expansion of the injection grid spacing resulted in a 75% decrease in the number of injection points required, saving more than one month in the field and more than 40% of the remedial costs, mainly in drilling and field over sight costs.

The implementation of Primawave resulted in the successful injection of *in situ* slow-release electron donor delivery. The results from the Primawave application were immediate, and several long-term benefits were seen:

- Blow-by (and day-lighting) responses at injection points did not occur during any of the over 100 injection events.
- Overall injection efficiency was maximized with Primawave, and the targeted volumes of chemicals were delivered when Primawave was utilized.
- The dissolved concentrations of chlorinated VOCs declined dramatically over a twelve-month monitoring period in monitoring wells located in the treatment zone.

