

General Approaches to DNAPL Free Product Remediation

Xitech Product Recovery equipment was designed for the following remediation approaches.

Free Product Pumping: This approach of recovering Light or Heavy ***Free Product*** only is a low cost and low maintenance approach to cleaning up your site. This approach is best utilized when depths to product are between 5 and 200 feet. We recommend the ADJ201(2" pump) and ADJ1100 (4" pump) for all Light solvent like DNAPL's. We recommend ONLY our ADJ1100 for Coal Tar recovery. All Xitech controllers provide multiple choices of intermittent recovery rates, monitor the high level tank condition, and display total run time of each pump.

Solar Powered Free Product Pumping: This approach of recovery is good for remote locations where AC power is not available or too costly to bring to the recovery area. Xitech's lowest cost approach to remote recovery would require the use of a 265 cubic foot bottle of nitrogen gas as our compressed gas source to run the DNAPL pump; a Xitech pump controller to run the pump intermittently; and a deep cycle 12 volt battery and solar panel to provide DC power to operate the controller. Xitech also offers a completely integrated solar powered system for remote recovery called the REM2500ES remote solar powered station. The REM2500ES is best where higher recovery rates are expected, and depths to product are between 5 and 100 feet.

Mobile Solar Powered Free Product Pumping: This approach of recovery is best for situations that require free product recovery of multiple wells or sites that are remote or in locations that are restricted from using normal recovery equipment. In this situation we have designed a road certified trailer recovery system which includes one pump, one 2500ES controller with high level tank shutoff, one 230 gallon product tank with secondary containment, DC powered air compressor, membrane air dryer, 12 volt battery, solar panel, hose reel rigidly mounted, 100 feet of hose, and a rigid mounted housing for the pump.

Hazardous Class I, Division 1 Free Product Pumping: The Xitech pneumatic pump is the safest pumping technology for this kind of site. The Xitech 2550ES explosion-proof Class I, Division 1 rated single pump controller is our only controller offered for this type of site.

Selecting the Best DNAPL Recovery Approach for Your Site

There are always going to be many issues to consider before selecting a remediation approach for any site. The following examples will give you a general idea of how to select one of our approaches.

Example #1:

If accelerated site closure is MORE important than capital costs, and the DNAPL is Coal Tar, then we would recommend installing a finger heater in the well in the groundwater above the Free Product.

Example #2:

If lower capital costs and lower operational costs are more important than time, and there is no requirement for removing groundwater on this site, then we would recommend pumping slowly and intermittently.

Example #3:

If your well is remote from AC power and/or is located near big confining obstacles (i.e. between to sets of rail road tracks), then we would recommend the solar power pumping approach.

Example #4:

If your site has several wells that are in a heavy traffic area where trenching is not allowed (i.e. airport taxi way), then we would recommend the mobile solar powered pumping approach.

Example #5:

If your site has a well that is in a hazardous area where only Class I technology is allowed (i.e. oil refineries), then we would recommend our pneumatic pump and Class I Div 1 explosion-proof controller.