

Closed-Loop Bioremediation Pilot Demonstration NWIRP Bethpage, New York



A DIVISION OF AR UTILITY SPECIALISTS, INC.

Proprietary Information

Project Summary 26 March 2005 – 29 April 2005

From 26 March – 29 April, site activities focused on establishing a subsurface bioreactor. Captured, indigenous bacteria, collected since the beginning of the project were deposited in above-ground bio-growth cells (see photo below). Nutrients, including contaminants, surfactant, and growth promoters were added and growth of hydrocarbon degrading bacteria was monitored.

Subsurface introduction of the hydrocarbon degrading bacteria, surfactant, growth promoters, and nutrients began on 8 April 2005, utilizing the surfactant foam as the transport media, and powered by the new, high output 50 hp, 221 cfm compressor (see photo below) that was installed on 7 April 2005. To date, intensive foaming of the wells 7, 8, 9, and 10 to the north and 17, 18, and 19 to the south of the concrete pad has been completed.

The contaminant adsorption and mobilization activities from February through March have resulted in warmer, more liquid phase fuel oil contaminant. As a result, free product recovery was restarted after shutdown over the winter. Collection using skimmer pumps located in MW1 and MW2 have yielded approximately 50 gallons of mobile fuel oil in the last 3 weeks (see photo below).



Free Product Recovery



Indigenous Bacteria
Growth Cells



A New High-Capacity Air Compressor
For Accelerated Surfactant and Nutrient Foaming

Closed Loop Bioremediation Pilot Demonstration

Project Information

Description: Bioremediation of Diesel and Fuel Oil Impacted Soil
 Client: US Navy (NFESC / EFANE)
 Contract Number: N47408-04-C-7505
 Contract Amount: \$1,673,935
 Contract Period: Feb 2004 – May 2006
 Prime Contractor: Tierra Technologies
 Subcontractors: Locus Technologies, Inc.
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Completed Activities

- Attended RAB Meeting on 6 April 2005
- Groundwater Sampling on 11 April 2005
- Installation of 50 hp, 221 cfm Compressor for Accelerated Subsurface Circulation
- Surfactant + Nutrients Foaming in Wells Surrounding Concrete Pad
- Free Product Recovery (On Going)
- CLB Vapor Circulation and Treatment
 - Lines 1 – 5
 - Sparging on all Lines

Current/Future Activities

- Surfactant + Nutrients Foaming in Wells Surrounding Concrete Pad
- Free Product Recovery (On Going)
- CLB Vapor Circulation and Treatment
 - Lines 1 – 5
 - Sparging on all Lines
- Soil Confirmation Boring # 3 Scheduled for 16-20 May 2005

Current Completion Status

Task 1	Pre Design	100%
Task 1.5	RAB Meetings	80%
Task 2	Work Plan	100%
Task 3	Permits	100%
Task 4	Infrastructure Install	100%
Task 4.5	Site Electrical	100%
Task 5	System Operation	55%
Task 6	Soil Borings	31%
Task 7	Final Report	0%
Task 8	Site Restoration	0%

