

**Technical Review Panel (TRP)  
Decision Document  
Site Remediation and Waste Management Program**

Panelists: Barry Frasco, Assistant Director, Hazardous Site Science Element  
Ed Putnam, Assistant Director, Remedial Response Element  
Wayne Howitz, Assistant Director, Responsible Party Remediation Element

Remediating Party: Clorox Products

Date of Request: 11/6/03

Consultant: Viper Remediation

Date of Meeting: 4/6/04

One Greentree Center, Suite 201  
Marlton, NJ 08053-3105

Site Address: Paulsboro Packaging, Inc. (PPI)  
Universal Road and Mantua Avenue  
Paulsboro Borough, Gloucester County  
ISRA Case # E86286  
PI#: 030676

**Disputed Technical Issue(s) Per Technical Review Request:**

1. Whether all PPI site groundwater contamination is due to the adjacent British Petroleum Amoco (BP Amoco) site.
2. Whether BP Amoco remedial activities have caused a reversal of groundwater gradient at PPI site.

Note: Since PPI has agreed to review the AOCs and submit a summary of all AOCs as required by the Department's June 16, 2003 letter, this issue is not discussed.

**Relevant Regulations:** N.J.A.C. 7:26E

**Pertinent Information Considered:** Groundwater data.

**Decision of Technical Review Panel:** The request for only one additional round of groundwater sampling can not be approved. BP Amoco remedial activities have not caused a gradient reversal.

**Background**

The 10.09-acre site (Block 1, Lot 2B) is located in an industrially zoned area of Paulsboro Borough, Gloucester County. Historic site operations have included fertilizer and insecticide manufacturing, acids and munitions manufacturing, drum reconditioning and since 1970, solvent, insecticide and automotive product chemicals packaging. To the north of the site is Essex Chemical Company and to the northwest is a

large petroleum tank farm owned by British Petroleum Amoco (BP Amoco). Land to the east and south of the site consists of undeveloped woodlands and wetlands.

Numerous Areas of Concern (AOCs) have been addressed at this site including floor drains, septic systems, above ground tank farm, underground storage tanks, truck and rail car loading areas, drum storage area, and contaminated soils. Remedial activities have included soil excavation and enhanced bioremediation with soil vapor extraction in source areas.

### **Groundwater**

There are 33 ground water monitoring wells on the site. The primary ground water contaminants consist of chlorinated solvents, i.e. 1,1,1-Trichloroethane (TCA), Chloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, Tetrachloroethene, Chlorobenzene, 1,2-Dichloroethane as well as Benzene. The majority of the contamination is within the shallow water-bearing zone. The suspected source area of ground water contamination is a former Infiltration Percolation (IP) Lagoon.

PPI was pumping approximately 2,000 gallons of ground water per week (for the purpose of hydraulic control of contaminated ground water associated with the former IP Lagoon) from select wells under an NJPDES-DGW permit. Pumping ceased prior to 1998; since that time, pumping has not resumed.

In May 2002, PPI sampled 19 monitoring wells on site. The following contaminants were detected above the New Jersey Groundwater Quality Standards (GWQS):

1,1,1-TCA in MW-8 (Shallow)  
Chloroethane in MW-29 (Shallow)  
1,1-Dichloroethane in MW-19 (Intermediate) and MW-29 (Shallow)  
1,1-Dichloroethene in MW-29 (Shallow)  
Tetrachloroethene in MW-1 (Shallow), MW-6 (Shallow), MW-9 (Shallow), MW-17 (Intermediate)  
Chlorobenzene in MW-33 (Intermediate)  
1,2-Dichloroethane in MW-18 (Deep), MW-33 (Intermediate)  
Benzene in MW-12 (Shallow) and MW-33 (Intermediate)  
MTBE (as Tentatively Identified Compound) in MW-33 (Intermediate)

PPI has alleged that the BP Amoco facility adjacent to PPI is pumping groundwater to maintain hydraulic control and that contamination from the BP Amoco facility is migrating onto the PPI property.

### **Disputed Technical Issues per the Technical Review Request**

PPI contends that all groundwater contamination at their site is the result of the remediation being conducted by BP Amoco on the adjoining property. PPI contends that

they should be required to do no more than confirm the groundwater quality with one final round of testing.

### **Decision of the Technical Review Panel**

The Department has previously determined that BP Amoco is responsible for the Chlorobenzene and 1,2-Dichloroethane contamination in the deep aquifer zone. This determination led the Department to issue the September 20, 1995 letter conditionally approving an amended groundwater monitoring proposal. However, PPI has not demonstrated that TCA plumes have migrated from the BP Amoco facility to the PPI property within the shallow aquifer zone. The data from the BP Amoco facility does not support this conclusion either. Therefore, the Department, based upon monitoring well data, has determined that the TCA (and daughter compounds) contamination on the PPI facility to be the responsibility of PPI.

The Department reviewed recent BP Amoco groundwater data for the zone of influence around wells on their site. This review indicates that BP Amoco pumping has not caused a gradient reversal.

The remedial process requires the following steps be achieved:

1. Source removal
2. Establish a decreasing trend, (i.e. apply the Mann-Whitney U Test to eight rounds of groundwater sampling data.)
3. When the groundwater quality standards are not met, but natural remediation is documented, the Department can issue a conditional No Further Action ((NFA) regarding groundwater.
4. When the groundwater quality standards are met, the Department can issue an unconditional NFA regarding groundwater. Soils may require institutional controls and engineering controls.

The TRP advised PPI to determine what remedial action they want to take to address the TCA (and daughter compounds) contamination. The TRP recommended the following approach to PPI.

1. If PPI believes that the remediation is complete, PPI can collect two rounds of groundwater samples from the same wells sampled in May 2002. If the contaminants are below the GWQS for both rounds, PPI will not be required to do any additional groundwater monitoring. The Department could issue a NFA for ground water (dependent on resolution of soil AOC issues, including status of the lagoon deed notice that does not conform to current requirements).
2. If the sampling of the wells reveals constituents above the GWQS, PPI must then continue to monitor the wells and establish a decreasing trend. Once a decreasing trend is established in accordance with N.J.A.C. 7:26E, the Department could consider a natural remediation proposal. PPI would then provide the necessary

information and the Department would establish a Classification Exception Area (CEA). The Department could issue a restricted NFA with conditions for ground water (dependent on resolution of soil AOC issues, including status of the lagoon deed notice that does not conform to current requirements).

3. In order for PPI to receive a conditional NFA for this site, PPI needs to complete the following:
  - a. Demonstrate a decreasing trend as defined in N.J.A.C. 7:26E; and
  - b. Provide CEA information; and
  - c. Complete a Baseline Ecological Evaluation (BEE) for this site. This is needed to receive a NFA; and
  - d. Contact the Office of Natural Resource Restoration (ONRR) to determine PPI's Natural Resource Injury liability.
  - e. Complete evaluation of soil AOCs and implement any needed changes to institutional and engineering controls.
4. Once items 1, 2 and 3 are completed and PPI resolves any liability for Natural Resource Injuries, the Department can then issue the appropriate NFA.