UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
1 CONGRESS STREET, BOSTON, MA 02114

Enforcement Confidential Materials Attached

MEMORANDUM

DATE: September 25, 2002

SUBJ: Request for a Removal Action at the Picillo Farm Superfund Site, Coventry, Rhode Island - **Action Memorandum**

FROM: Anna Krasko, On-Scene Coordinator
NH & RI Superfund

THRU: Michael Jasinski, Section Chief
NH & RI Superfund

Larry Brill, Branch Chief
R&R I

TO: Richard Cavagnero, Acting Director
Office of Site Remediation and Restoration

I. PURPOSE

The purpose of this Action Memorandum is to request and document approval for funds to initiate a removal action at the Picillo Farm Superfund Site in Coventry, Rhode Island (the "Site").

This Action Memorandum proposes to address the threat to public health presented by exposure to contaminated surface and near-surface soils and waste material found at the Site. This action is necessary to prevent, minimize, and mitigate potential damage to the public health or welfare, and the environment posed by a release of hazardous substances to the environment. Pursuant to Section 122(b) of CERCLA, 42 U.S.C. § 9622(b), this action will be conducted by five potentially responsible parties ("PRPs") at the Site and EPA will reimburse those parties for 40% of the actual project costs, up to a ceiling for this Action Memorandum of $1,400,000.

II. SITE CONDITIONS AND BACKGROUND

CERCLIS Identifier:	RID980579056
SITE Identifier:	01
Category of Removal:	Time Critical
Nationally Significant/ Precedent Setting:	No

A. Site Description

1. Removal Site Evaluation

In 1993, EPA issued a Record of Decision ("ROD"), selecting soil vapor extraction ("SVE") and groundwater pump and treat as, respectively, the source control and management of migration remedies for the Picillo Farm Site. In 1995, EPA entered into a Remedial Design/Remedial Action ("RD/RA") Consent Decree under which five parties agreed to perform the remedy (the "PRP Group"). In 1999, during construction of the remedy, hazardous material consisting of elongated lumps of white to slightly gray, solid, firm textured material (the "epoxy waste" material) and grossly contaminated soil was uncovered by the PRP Group's contractor.

The PRP Group removed approximately 250 cu. yds. of this epoxy waste in order to install piping for the SVE and dual extraction manifold pipe in part of the source control area. This material was disposed of at a hazardous waste incinerator after it failed a TCLP test. An area containing approximately 1,500 cu. yds. more of this epoxy waste was delineated by the PRP Group's contractor and remains on-site, at estimated depths from three to nine feet below ground surface. A temporary asphalt cap was placed over the SVE source area, including the epoxy waste material, to inhibit water infiltration and aid in the dewatering efforts. This temporary cap is not equivalent to a hazardous waste landfill closure; no hazardous waste landfill is contemplated for the Site.

2. Physical Location

The Site is located at the end of Piggy Lane, in the western part of Coventry, Rhode Island, approximately 4,500 feet southwest of the intersection of State Highway 102 and Perry Hill Road. It is a former pig farm on which, in 1977, at least 10,000 drums of hazardous substances, plus an undetermined volume of liquid chemical waste was disposed of in several trenches on a 7.5 acre portion of

the Site (the "Former Disposal Area"). The Site includes the 7.5 acre disposal area, which is fenced, and approximately 35 acres of cleared and wooded uplands and some wetlands, defined by the extent of the ground water and surface water contamination.

The area surrounding the Site is generally rural combining both large tracts of undeveloped land and residential areas comprised of older, widespread, single-family homes and newer developments of single-family homes. All of the homes are upgradient of the Former Disposal Area or lie in a different watershed. Currently, approximately 75 single-family homes are within one mile of the Former Disposal Area and new development continues to encroach on undeveloped land surrounding the Former Disposal Area. All homes in the vicinity of the Site are served by private on-property wells. Industrial, commercial, and non-hobby agricultural development in the vicinity of the Site is limited to cranberry bogs, which lie approximately 5,000 feet to the southwest of, and downstream from, the Former Disposal Area.

The Site area is underlain by granite gneiss bedrock units. The shallower bedrock is found in the western and central areas of the Former Disposal Area and the deeper bedrock is found to the west, east, and northeast of the Disposal Area. The unconsolidated deposits consist of boulder-rich and silt-rich till overlain by heterogeneous glaciofluvial deposits. The unconsolidated deposits vary in thickness from approximately 12 to 65 feet, and are generally thinnest in the northwest portion of the Site. Virtually no native or undisturbed soil remains at the surface within the previously fenced area of the Former Disposal Area due to alterations from the operation of the pig farm, waste disposal, or remediation. Depth to groundwater beneath the Site ranges from near surface (at seep and wetland locations) to 30 feet below the ground surface.

3. Site Characteristics

The Site was owned by Warren and Selina Picillo, who operated a pig farm on 100 acres of the property. In 1977, Warren Picillo accepted hazardous wastes for disposal in trenches constructed on 7.5 acres of the Site. A fire and explosion at the Site brought it to the attention of the Rhode Island Department of Environmental Management (RIDEM). In the early 1980s, RIDEM requested EPA's assistance. Between 1980 and 1982, the State and EPA conducted drum removal operations. The Site was listed on the NPL in 1983. EPA conducted a Remedial Investigation/Feasibility Study ("RI/FS") and issued a ROD in 1985, and an amended ROD in 1987, for disposal of contaminated soil and closure activities. That ROD was implemented in 1988 by four of the PRPs under a Consent Decree. In 1993, following another RI/FS, EPA issued a ROD for source

control and management of migration remedies. The source control component called for soil vapor extraction of contaminated soil; the management of migration component called for a groundwater extraction and treatment system. In 1995, the United States reached agreement for performance of the remedy and reimbursement of past response costs with a number of PRPs. Pursuant to the RD/RA Consent Decree, five of the settling parties are performing the remedy (American Cyanamid, represented by American Home Products Corporation and Cytec Industries, Inc.; Ashland Chemical Company, now Ashland Inc.; GAF Corporation, represented by ISP Corporation; General Electric Company; and Monsanto Company, represented by Solutia Inc., referred to collectively as the "PRP Group"). The other settling parties made financial contributions to the cleanup.

The PRP Group is implementing the remedy under EPA and RIDEM oversight. The treatment plants for ground water and soil gas have been operational since March, 2001 and November, 2001, respectively, and the Site is in the Operation & Maintenance (O&M) phase. The PRP Group is developing a Compliance Monitoring Plan. Institutional Controls have been partially implemented on the Site, including on portions of neighboring parcels and the PRP Group is engaged in negotiations for the remainder of the required institutional controls.

The PRP Group will be implementing the proposed Removal Action under an Administrative Order on Consent ("AOC"). The Site is currently owned by the Town of Coventry, which foreclosed on the property for back taxes, and access agreements are in place to perform all work.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant

As part of the construction of the remedy in 1999, several soil borings and pipe trenches were installed in a portion of the Former Disposal Area called the Northwest Trench. The subsurface explorations uncovered epoxy waste over a lateral area of approximately 8,700 square feet, and at depths ranging from three to nine feet (Envirogen Field Memo 031, September 2, 1999). Extrapolations based on these data suggest a total volume of approximately 1,500 cubic yards of epoxy waste remaining in the ground. This waste was described by the PRP Group's contractor, Gradient Corporation, as "elongate lumps of white to slightly gray, solid, firm textured material" (Gradient, Waste Characterization Report, February 11, 2000). The waste failed the TCLP test for at least chloroform, benzene and trichloroethene, and exceeded Universal Treatment Standards (must treat below this level in order to land dispose) for a dozen volatile and semivolatile compounds. The waste material also had a very strong chemical

odor. Chemical characterization of soil and epoxy waste performed in August, 1999 by the PRP Group's contractor, OBG Laboratories, indicated the presence of part per million concentrations of halogenated solvents (methylene chloride, chloroform, 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, and 1,2-dichlorobenzene), and aromatic solvents (benzene, ethyl benzene, xylene, and 1,2,4-trimethylbenzene). In addition, part per thousand concentrations of the aromatic volatile compounds toluene and styrene were also present as documented in the Gradient Corporation report dated February 11, 2000. A number of these compounds are Contaminants of Concern for which soil and groundwater cleanup levels have been established in the 1993 ROD.

The 1999 analytical results for the epoxy waste and the grossly contaminated soil showed elevated detection limits. It is likely that additional contaminants, in addition to those listed in Table 1, may be present which exceed regulatory standards or criteria. In addition to direct contact with the soil and waste material, the potential future exposures of concern include mass flux of contaminants from epoxy waste and soil into soil gas and groundwater, resulting in inhalation exposures to ambient indoor air through vapor intrusion, inhalation of vapors as a result of showering, and ingestion of groundwater as a drinking water source.

Table 1

SOIL CLEANUP LEVELS

FOR THE PROTECTION OF HUMAN HEALTH AND THE AQUIFER

Contaminants Of Concern (Carcinogenic Class)	1993 ROD Soil Cleanup Level (ug/kg) (Leaching Model)	Direct Exposure Criteria (ug/kg) (RIDEM Residential)	Soil/Epoxy Waste Contaminant Level (ug/kg) August 1999
Benzene (A)	5.0	2,500	170,000
Chloroform (B)	71	1,200	390,000
Methylene chloride (B)	5	45,000	230,000
Styrene (B)	460	13,000	6,700,000 (E)
Tetrachloroethene (B)	11	12,000	58,000
Trichloroethene (B)	5.1	13,000	330,000
Ethylbenzene (D)	1,200	71,000	270,000
Toluene (D)	990	190,000	1,600,000
1,1,1-Trichloroethane (D)	270	540,000	210,000
1,2-Dichlorobenzene (D)	600	510,000	230,000
1,2,4–Trimethylbenzene (D)	–	–	56,000
1,3,5-Trimethylbenzene (D)	–	–	15,000
Xylene (total) (D)	–	110,000	740,000
Naphtalene	--	54,000	14,000

The temporary cap, which the epoxy waste is now under, will partially hinder, but not stop, migration of volatile organic compounds to the atmosphere and ground water. This material will continue to generate vapors which will migrate laterally and vertically to the atmosphere and ground water. DiGiulio and Varadhan (Ground Water Monitoring and Remediation Journal, Fall, 2001 and EPA soil venting publication, *EPA/600/R-01/070*, 2001) conducted vadose zone simulations to demonstrate the potential for migration to ground water by vapor diffusion alone. Input for modeling is summarized in Table 2. DiGiulio and Varadhan assumed a hypothetical Gaussian-shaped soil concentration profile, illustrated in Figure 1, to represent the initial condition. Soil concentrations were input in 10 cm increments for model simulation. A hypothetical ground-water concentration versus time profile, typical of many systems undergoing pump and treat aquifer remediation, illustrated in Figure 2, was used to represent the lower first-type, time-dependent boundary condition. Ground-water concentrations were input at one year increments for model simulation.

Figure 3 illustrates mass flux to ground water as a function of three infiltration rates (0.000, 0.035, and 0.050 cm/d) and two water saturations (0.7 and 0.9). As might be expected, mass flux to ground water increased significantly with increased infiltration rate (advective transport) and decreased water saturation (diffusive transport). Figure 3 also illustrates the duration and potentially environmentally significant magnitude of diffusive mass flux to ground water at high water saturation and zero infiltration rate. This figure shows that isolating highly contaminated soil (even low permeability soil having a high moisture content) in a capped landfill decreases, but does not eliminate, mass flux to ground water. Therefore, isolation of highly contaminated soil or waste is not environmentally protective at the Picillo Site. Because of this, the use of a source control technology is required. The asphalt cap placed over the SVE area is not equivalent to a hazardous waste landfill closure and no hazardous waste landfill is anticipated to be constructed at the Site. Removal of this waste off-site is the most effective source control option.

Table 2 Input for modeling

	Description	Value	Units
S_w	water saturation	variable	$cm^3_{water}/cm^3_{pore\ space}$
S_n	NAPL saturation	variable	$cm^3_{NAPL}/cm^3_{pore\ space}$
η	porosity	0.35	$cm^3_{pore\ space}/cm^3_{soil}$
ρ_b	bulk density	2.15	g_{solids}/cm^3_{soil}
ρ_n	density of NAPL	1.462	g_{NAPL}/cm^3_{NAPL}
C^{sat}_w	water solubility for TCE	1.1E-03	g/cm^3
H	Henry's Law Constant for TCE	0.38	$(ug/cm^3_{air})/(ug/cm^3_{water})$
K_d	soil-water partition coefficient	0.126	$(ug/g_{solids})/(ug/cm^3_{water})$
M_o	average molecular weight of NAPL	131.5	g/mole
M_i	molecular weight of TCE	131.5	g/mole
D_g	free air diffusion coefficient for TCE	6366.8	cm^2/d
D_w	free water diffusion coefficient for TCE	0.804	cm^2/d
q_w	infiltration flux of water	0.035	cm/d
D_m	longitudinal mechanical dispersivity	30.0	cm
κ	first-order degradation rate	variable	1/d

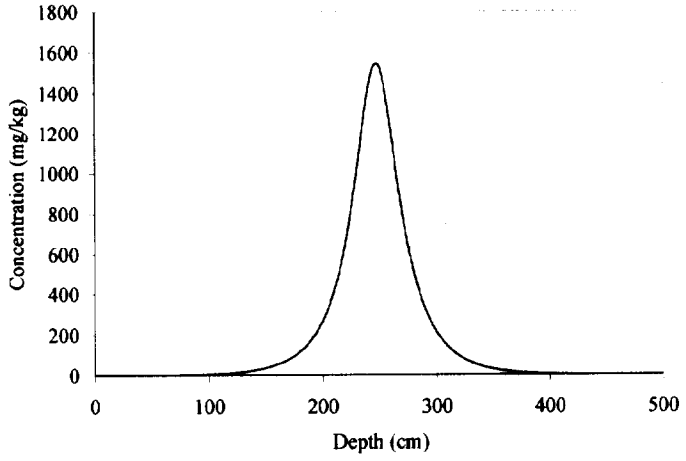


Figure 1 Hypothetical initial soil concentration profile

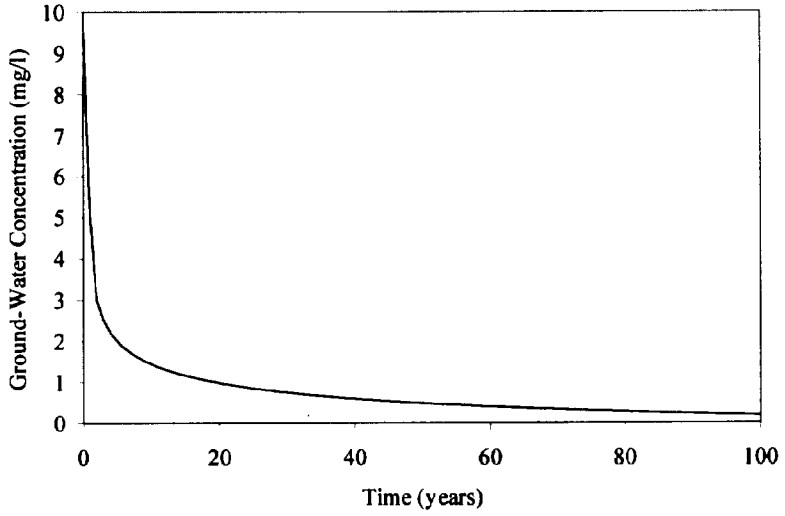


Figure 2 Hypothetical ground water concentration profile

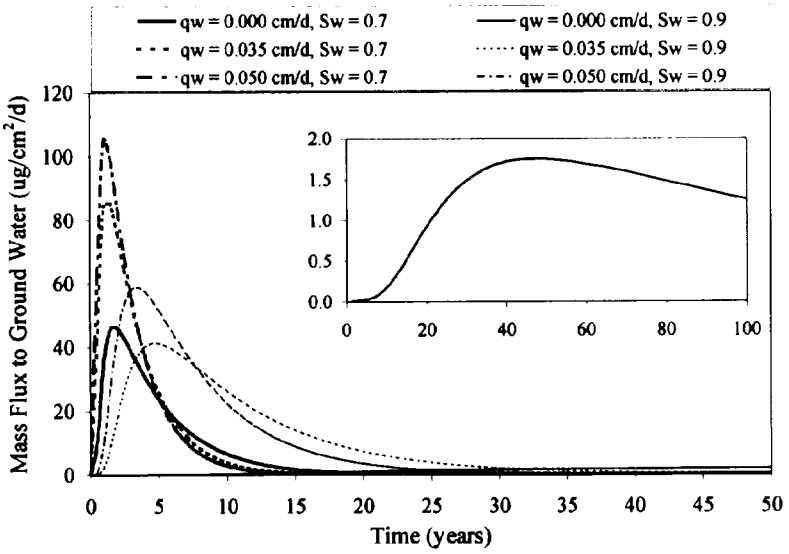


Figure 3 Mass flux to ground water as a function of time, infiltration rate, and water saturation for a first-type, time-dependent (TD) lower boundary condition. NAPL absent, no degradation.

References

DiGiulio, D.C., and R. Varadhan, Analysis of water and NAPL saturation, degradation half-life, and boundary conditions on VOC transport modeling: Implications for venting closure, *Ground Water Monitoring and Remediation,* Fall, 2001.

DiGiulio, D.C. and R. Varadhan, Development of recommendations and methods to support assessment of soil venting performance and closure, *EPA/600/R-01/070*, 400 p., 2001.

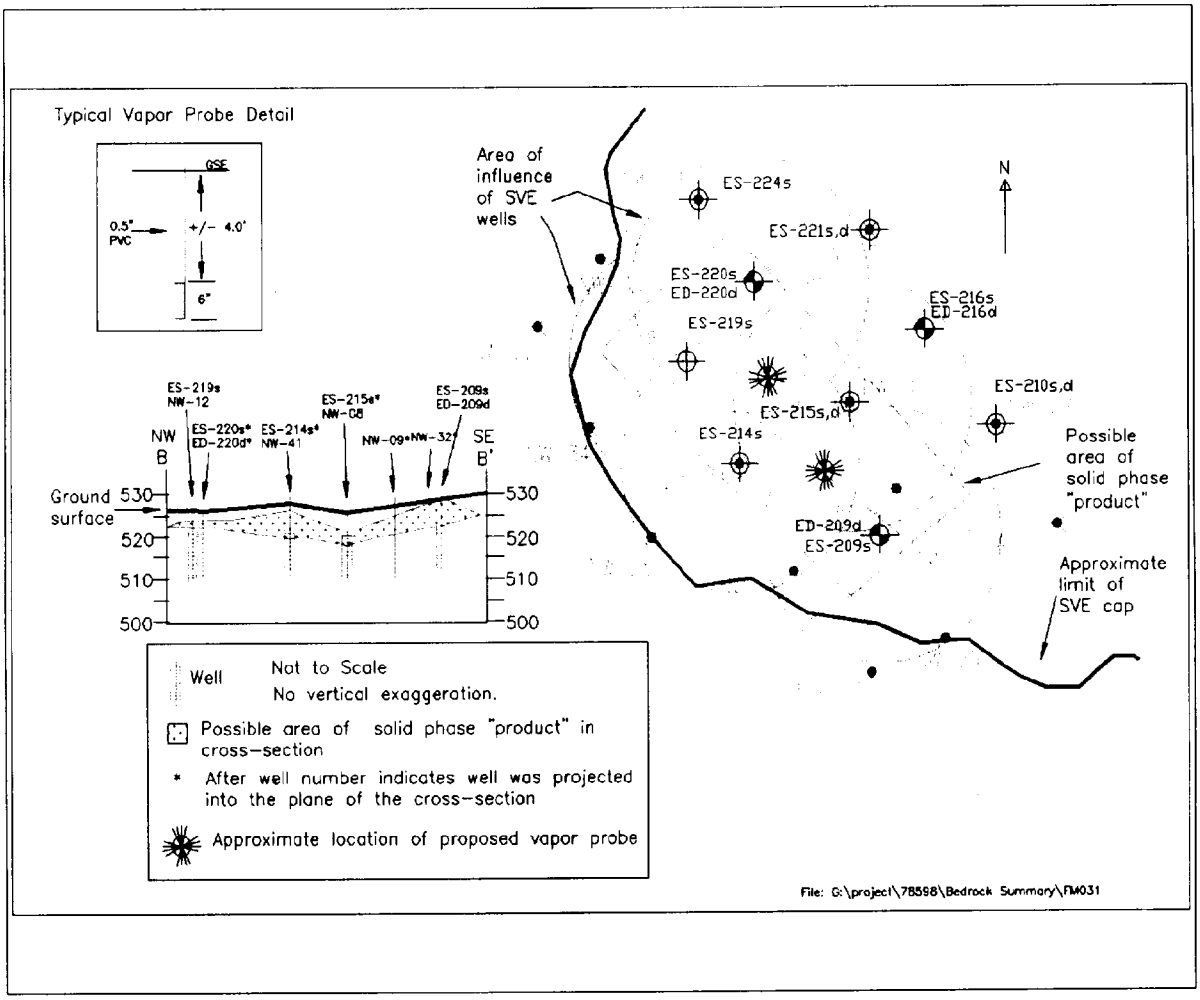
5. NPL Status

The Site is listed on the National Priority List (NPL). The Remedial Action, selected in the 1993 ROD, is currently being implemented by the PRP Group pursuant to the 1995 RD/RA Consent Decree.

6. Maps and Pictures

Photo 1. Excavation of epoxy waste, July 27, 1999 (Envirogen)

Photo 2. Paved trench areas after SVE installation, October 8, 1999 (Envirogen)



Map 1. Estimated location of "epoxy waste" (September 1999, Envirogen)

B. Other Actions to Date

1. Previous Actions

Table 3 summarizes the chronology of events, regulatory milestones and remedial responses over the nearly 25-year history of the Site.

Table 3

Site Chronology

Date	Event
Prior to late '70s	Pig farm and private residences occupied the Site.
1977	Waste shipped from other disposal facilities or diverted by waste haulers to Picillo over the course of several months was disposed of illegally into open, unlined trenches.
September 1977	Sodium aluminum hydride disposed of at the Site reacted and caused large explosion and fire, which brought the Site to the attention of the Town of Coventry, RIDEM and EPA.
1980-1982	Early agency removal actions: over 10,000 drums removed; 6 former disposal trenches excavated; some soil disposed of off–Site; some soil stockpiled—2 piles of Phenol-containing soil and 1 pile of PCB-containing soil.
1980-1983	First round of agency-lead investigation of ground water, surface water and soil—first RI/FS.
October 23, 1981	EPA proposed Site for the NPL.
September 8, 1983	Site was listed on the NPL.
1987	EPA issued an amended ROD stipulating off-Site disposal of the stockpiled compound-bearing soil and requiring a second RI/FS to determine nature and extent of residual compounds and metals and to evaluate ground water cleanup alternatives.
1988	EPA entered into a Consent Decree with four PRPs to implement the 1987 ROD: removal and off-Site disposal of the stockpiled soil and Site closure tasks.
1990-1993	EPA performed the second RI/FS.
June 15, 1993	EPA published notice of issuance of FS Report and Proposed Remedial Action Plan.
September 27, 1993	Second ROD issued requiring SVE of Source Area; groundwater treatment and extraction; and institutional controls.
1995	EPA entered into a Consent Decree with a group of PRPs, five of which agreed to implement the 1993 ROD.
October 1998	PRP Group completed Remedial Design.
Fall 1998	EPA excavated and removed shallow soils that contained PCBs from a portion of the Site.
January 1999-January 2000	PRP Group constructed systems for ground water containment and dewatering, SVE, and water and air treatment.
August 1999	PRP Group discovered epoxy waste and grossly contaminated soil during pipe trench excavation in the Northwest trench area.
March 2000	PRP Group submitted draft Construction Completion Report; final Institutional Controls Plan approved by EPA.
March 2001-August 2001	PRP Group implemented a series of tests and plant modifications to achieve Al and Zn surface-water-discharge criteria; source control dewatering and MOM remedy commence.
November 2001	PRP Group commenced source control SVE operation.

2. Current Actions

The Source Control and Management of Migration systems have been constructed and are operational. The draft Compliance Monitoring Plan, dated April 2000, is scheduled to be revised and will include a plan to monitor natural attenuation in the dilute plume. Institutional controls have been implemented for the former Picillo Farm parcel (now owned by the Town of Coventry), where this Removal Action is proposed to take place, and for the parcel which lies due west of and abuts the former Picillo parcel. Negotiations for institutional controls are on-going with the two owners of the three parcels that lie to the south and southwest of the Former Disposal Area. Land-usage restrictions can be modified or removed according to procedures set forth in the Institutional Controls Plan dated March 2000.

The SVE remedy is not expected to be effective in reduction of contaminant levels in the epoxy waste since this technology is not applicable to this type of waste material. Diffusion of contaminants into soil gas and groundwater will continue to be a source of exposure indefinitely if no action to remove this material is taken. The proposed Removal Action eliminates or significantly reduces exposures resulting from potential direct contact and the mass flux of contaminants from the epoxy waste and grossly contaminated soil into the soil gas and groundwater, thus contributing to the overall objectives of the Remedial Action. Following completion of the Removal Action, the SVE and dewatering operation will continue to further reduce levels of contaminants in the contaminated zones to meet cleanup levels protective of human health and the environment. Institutional Controls, established to be in place until the cleanup levels are met, will include engineering measures for control of vapor intrusion into indoor air.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

The State of Rhode Island has actively participated in all response actions. The State and EPA jointly conducted drum removal activities in 1980-1982. After the drum removal, RIDEM began an RI/FS, which was completed by EPA. The State also took enforcement actions at the Site.

The Town of Coventry is the current owner of the Site. The Town acquired the Picillo Farm property through a tax delinquency sale.

2. Potential for Continued State/Local Response

The State is a party to the RD/RA Consent Decree and is actively involved in the oversight of the PRP Group's work at the Site. In June, 2002, the Town of Coventry, as an owner of the Picillo Farm property, and the PRP Group executed and recorded an Easement Agreement, which also provides for access by EPA and the State. The Town of Coventry and the PRP Group have also agreed to Environmental Usage Restrictions on the Picillo Farm property, which are recorded in the public land records.

In 1999, EPA awarded a Technical Assistance Grant (TAG) to the Roaring Brook Watershed Association to help this group better understand cleanup activities at the Site. As part of the activities conducted under the Grant, the Association held two public workshops in the Fall of 2000.

III. THREATS TO THE PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to the Public Health or Welfare

Section 300.415(b) of the National Contingency Plan (NCP) provides that EPA may conduct a removal action when it determines that there is a **threat to human health** or welfare or the environment based on one or more of the eight factors listed in 300.415(b)(2) of the NCP. The following factors listed below are present at this Site:

1. "Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;" [300.415(b)(2)(i)].

Shallow epoxy waste and grossly contaminated soil were found at the Site, which is located in a rural residential area. The epoxy waste contains a number of compounds, including toluene and styrene in the parts per thousand range and methylene chloride, chloroform, 1,1,1-trichloroethane, trichloroethene, tetrachloroethene, and 1,2-dichlorobenzene in the parts per million range. The epoxy waste is wrapped in plastic and shows little sign of degradation. The gas permeability (air flow) of this waste material is virtually negligible, thus soil venting would have little effect on removal of volatile compounds from this material. It represents a long-term source of VOC release to groundwater and the atmosphere via slow diffusion and requires removal. It also represents a direct contact risk under potential future exposure scenarios.

2. "Actual or potential contamination of drinking water supplies or sensitive

ecosystems;" [300.415(b)(2)(ii)].

The epoxy waste is considered a source of contamination for the underlying aquifer, which is classified under the Federal regulations as a Class IIB aquifer, which is a potential source of drinking water. The aquifer is classified as Class GA, drinking water aquifer by the State of Rhode Island.

3. "Hazardous substances or pollutants or contaminants in drums, barrels, tanks or other bulk storage containers, that may pose a threat of release;" [300.415(b)(2)(ii)].

Significant volume, estimated at 1,500 cu. yds., of waste material mixed in with grossly contaminated soil is currently in the ground on-site. During excavation and manifold pipe installation in August, 1999, approximately 250 cu. .yds., of this material was removed. The material failed the TCLP tests and had to be disposed of at a hazardous waste incinerator. The chemical analysis performed on this material indicates high levels of halogenated and aromatic solvents. The material was observed to consist of soil, solid phase "sausage like" epoxy waste wrapped in latex like tubes and portions of broken drums. That material was visible along the side walls of the piping trench excavation before the trench was backfilled. Based upon experience with the epoxy waste during construction of the remedy, it is assumed that waste volume reduction through separation of the epoxy waste from the soil it is commingled with will not be feasible.

4. "High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;" [300.415(b)(2)(iii)].

Parts per thousand and parts per million aromatic and halogenated compounds (both carcinogenic and non-carcinogenic) were found in the chemical analysis of the material located within 10 feet below ground surface. Modeling calculations demonstrate that there is a mass flux of the contaminants into the air and groundwater. Once excavated, the material has a very strong chemical odor.

5. "The availability of other appropriate federal or state response mechanisms to respond to the release;" [§300.415(b)(2)(vii)].

RIDEM has indicated that funding and staffing limitations will restrict its ability to respond to this situation. Conditions at the Site support removal actions as described in the NCP.

6. "Other situations or factors that may pose threats to public health or welfare or the environment." [§300.415(b)(2)(viii)].

This long-term source of contamination severely impacts the ability of the SVE to mitigate impacts of contamination on the groundwater. If the waste material is not removed, SVE may have to be operational for an extensive period of time.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this Action Memorandum, may continue to present an imminent and substantial endangerment to public health, or welfare, or the environment. Federal, State and local agencies are recommending that immediate response actions be taken to reduce potential exposure.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

The proposed actions are based on documents and data which will be available to the public in the Administrative Record, to be available for public review within 60 days of the inception of these proposed actions, as described in the National Contingency Plan (40 CFR 300.415(m)(i)). The proposed actions were developed to reduce the potential for direct contact with contaminants and leaching of contaminants from the epoxy waste and grossly contaminated soil and to aid in the effectiveness of the SVE and groundwater extraction and treatment systems constructed and operating on the Site. The actions proposed are consistent with CERCLA as amended, and are consistent with the NCP.

Proposed response actions include:

a) Develop Project Plans

Plans will be developed for waste characterization, delineation, excavation, sampling, and off-site disposal of the epoxy material and grossly contaminated soil.

b) Delineate, excavate and properly dispose off-site of the material

The vertical and horizontal extent of epoxy waste and grossly contaminated soil will be established and the material will be excavated and placed into roll-off

containers. Available information suggests that a total volume of approximately 1,500 cu. yds. of waste material is left in the ground. Although there is fairly good definition of the lateral extent of the waste, there is greater uncertainty and significant variability as to its vertical extent. To account for this variability, the waste volume estimate is increased by 50% for cost estimates, yielding an assumed volume of 2,250 cu. yds. Also, based upon experience with this epoxy waste during construction of the remedy, it is assumed that waste volume reduction through separation of the epoxy waste from the soil it is commingled with will not be feasible. As a benchmark, if the epoxy waste were found at a depth of ten feet throughout its lateral extent (which is not believed to be the case), the total volume would be 3,000 cu. yds. Therefore, for purposes of the cost estimate, a volume of 2,250 cu. yds. is assumed, although the actual volume could be more or less than that

Based upon the characteristics of this waste, the availability of disposal technologies and the likelihood of their success and past disposal experience with this waste type, it is assumed that the method of disposal to be used for the waste will be incineration, followed by land filling of the ash. No difficulties in finding the disposal facility are anticipated, although it should be noted that disposal costs of this nature have been known to fluctuate significantly based upon a number of variables, including trucking costs (diesel fuel), incinerator fuel costs and market demand. Alternative waste management and off-site disposal options can be used if these provide cost-effective alternatives to incineration, and comply with applicable regulations.

c) Confirmatory Testing at the Limits of Excavation and Extraction System Reconstruction

Confirmatory testing at the limits of excavation will be performed to document that objectives of excavation activities have been met, all epoxy waste has been removed, and no contaminated soil zones associated with this waste material remain outside SVE system influence. Several components of the extraction system will need to be removed and replaced to accommodate excavation of the epoxy waste. Upon completion of this removal action, SVE will continue operations in the contaminated zones.

d) Document activities and completion of the removal action

Report(s) will be developed to document activities and procedures actually used, including, but not limited to, chronology of work, equipment and materials used, tabulation of field data, including quality control/quality assurance (QA/QC) documentation, description of volumes of waste and soil removed and disturbed,

and off-site waste disposal documentation, including waste manifests.

e) Conduct community outreach activities

The community will be informed of the pending work through Site fact sheets and press releases.

2. Contribution to Remedial Performance

Performing this removal action will serve to protect public health and the environment by reducing the potential for further release of and exposure to contaminants found at the Site. These proposed actions are the result of an integrated effort of the PRP Group, EPA and the State of Rhode Island. Removal of the source material will contribute to, and be consistent with, the performance of the on-going remedial action at the Site, designed to remove residual contaminant sources and to remediate the groundwater.

3. Applicable or Relevant and Appropriate Requirements (ARARs)

The federal ARARs determined to be practicable for this removal action include the Resource Conservation and Recovery Act (RCRA). The State of Rhode Island ARARs which may apply to this removal action include RIDEM Hazardous Waste Management Act of 1978, Rules and Regulations for Hazardous Waste Management and Proposed Amendments; RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, RIDEM Water Quality Regulations; Rules and Regulations Governing the Enforcement of the Freshwater Wetlands Act; RIDEM Rules and Regulations for Groundwater Quality; and RI Air Pollution Control Regulations.

B. Estimated Costs and Schedule

The estimate of costs associated with carrying out the proposed actions are given below. The actions are anticipated to be completed within 3 months of their commencement.

The total cost of the project, based on estimates provided by the PRP Group and reviewed by EPA, is $3,526,000. EPA's cost share pursuant to EPA's preauthorization of mixed funding, is 40% of the actual project costs, up to a ceiling of $1,400,000.

Table 4
Project Cost Estimate and Assumptions

EXCAVATION OF EPOXY WASTE AND COMMINGLED SOIL IN THE WEST PORTION OF THE NORTHWEST TRENCH				
Assumptions:				
1. Waste volume estimates presented herein are provided by the PRP Group and based on soil borings and trenching completed during the installation of the 100% design remedy.				
2. No waste separation will be completed on-site. All waste material (soil and epoxy solid waste) excavated will be disposed of off-site. Disposal method will be incineration followed by land filling. This disposal method is consistent with the disposal of the epoxy solid waste excavated during the SVE system construction.				
3. Groundwater extraction wells and SVE wells in the west portion of NWT will need to be shutdown for the entirety of this excavation/restoration activity.				
4. All underground piping servicing the SVE and Dual wells in the west portion of the NWT will need to be temporarily disconnected.				
5. It is assumed that all wells in the excavation area will be saved by temporarily taking them off-line, an allotment for well repair is included herein.				
6. Upon completion of the excavation, the area will need to be restored with clean fill and asphalt, all extraction wells will require new piping and/or electrical.				
7. All excavation work will be performed in Level C PPE. All restoration work will be performed in Level D PPE				
8. It is assumed that the extent of waste to be excavated will be based upon visual observations made in the field and that an extensive confirmatory sampling program of the excavation base will not be required.				
9. All costs have been rounded to the nearest $1000 reflecting the level of accuracy of this cost estimate.				
	Volume of Soil	2,250	cy	
	Weight of Soil	3,800	ton	
	Soil Density of excavated material	125	pcf	
	Approximate area of asphalt cap removed	8,700	sf	
	Excavation productivity	200	tons per day	
	Estimated Excavation Duration	19	days	

REMOVAL OF SOIL/WASTE BY DIRECT LOAD				
Excavation	Quantity	Unit	Unit Price	Price
Engineering Design, Workplans, HASP, Summary Report, Waste Management, Contracting	1	lump sum	$ 75,000	$ 75,000
Remove and dispose of asphalt cap	280	tons	$ 50	$ 14,000
Construction Oversight	19	day	$ 2,400	$ 46,000
Heavy equipment and work crew	19	day	$ 5,000	$ 95,000
Restoration				$ -
Backfilling and compaction	2,250	cy	$ 20	$ 45,000
Construction Oversight	10	day	$ 1,000	$ 10,000
Heavy equipment and work crew	10	day	$ 5,000	$ 50,000
Disposal				$ -
T & D Incineration	3,800	tons	$ 750	$ 2,850,000
			Subtotal estimated cost to remove/replace soil only	$ 3,185,000
REPLACEMENT OF WELLFIELD PROCESS EQUIPMENT				
Replace asphalt	967	sy	$ 30	$ 29,000
Repair of SVE/Dual/VP/PZ	1	lump sum	$ 30,000	$ 30,000
Replace approximately 750 lf of GW/SVE 2-inch HDPE piping and fittings	750	lf	$ 15	$ 11,000
Replace 2 road boxes and reinstall 1 SVE valve bank	1	lump sum	$ 7,500	$ 8,000
Replace approximately 200 lf of electrical and controls to 2 dual well	1	lump sum	$ 20,000	$ 20,000
Construction Oversight	15	day	$ 1,000	$ 15,000
Piping Crew	15	day	$ 3,000	$ 45,000
Piping Pressure Testing	3	day	$ 1,500	$ 5,000
Misc Equipment & supplies	1	lump sum	$ 10,000	$ 10,000
			Total estimated cost to restore wellfield process equipment	$ 173,000
			Total Estimated Cost	**$ 3,358,000**
			5% Contingency	**$ 168,000**
			Total Estimated Cost With Contingency	**$ 3,526,000**

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

In the absence of the Removal Action described herein, the epoxy waste and grossly contaminated soil can be expected to remain unaddressed, and threats associated with exposure to hazardous substances will continue.

VII. OUTSTANDING POLICY ISSUES

None

VIII. ENFORCEMENT

ATTACHED TO THIS DOCUMENT - FOR INTERNAL DISTRIBUTION ONLY

IX. RECOMMENDATION

This decision document represents the selected Removal Action for the Picillo Farm Superfund Site in Coventry, Rhode Island, developed in accordance with CERCLA, as amended, and is not inconsistent with the NCP. This decision is based on the Administrative Record for the Site.

Conditions at the Site meet the NCP Section 300.415(b)(2) criteria for a Removal Action and I recommend your approval of the proposed Removal Action. The project cost is estimated to be $3,526,000, of which EPA's total project ceiling is $1,400,000. If approved, EPA's share of the total project costs will come from the remedial action enforcement allowance.

APPROVAL: _____ DATE: Sept 25, 2002

DISAPPROVAL: _____ DATE: _____