UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

STATEMENT OF BASIS

UNITED DEFENSE, L.P.
YORK, PENNSYLVANIA 17405

EPA ID NO. PAD 003 0225 418

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LIST OF ATTACHMENTS

ACRONYMS

Act 2	the Commonwealth of Pennsylvania Land Recycling Program
AOC	Area of Concern
CFR	Code of Federal Regulations
CMS	Corrective Measures Study
EPA	Environmental Protection Agency
EPBA	the Eastern Property Boundary Area
Facility	United Defense, L.P.
GPRA	Government Performance and Results Act
HSWA	the Hazardous and Solid Waste Amendments
IC	Institutional Control
IM	Interim Measure
MCL	Maximum Contaminant Level
NPDES	National Pollutant Discharge Elimination System permit
PADEP	the Pennsylvania Department of Environmental Protection
Permit	RCRA Corrective Action Permit
RBC	Risk Based Concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation Report
SB	Statement of Basis

SWMU	Solid Waste Management Unit
UDLP	United Defense, L.P.
U.S.C.	United States Code
VOCs	Volatile Organic Compounds
WWA	West Warehouse Area

I. Introduction

The United States Environmental Protection Agency ("EPA") has prepared this Statement of Basis ("SB") for the BAE Systems Land and Armaments, L.P. (BAE) facility located at 1100 Bairs Road, York, Pennsylvania (the "Facility"). After reviewing the results of recent soil and groundwater sampling activities, past and present environmental practices, historical investigations and remedial activities, EPA is proposing groundwater treatment and monitoring with institutional controls as the remedy for the Facility. The purpose of this document is to solicit public comment on EPA's proposed remedy prior to making its final remedy for the Facility.

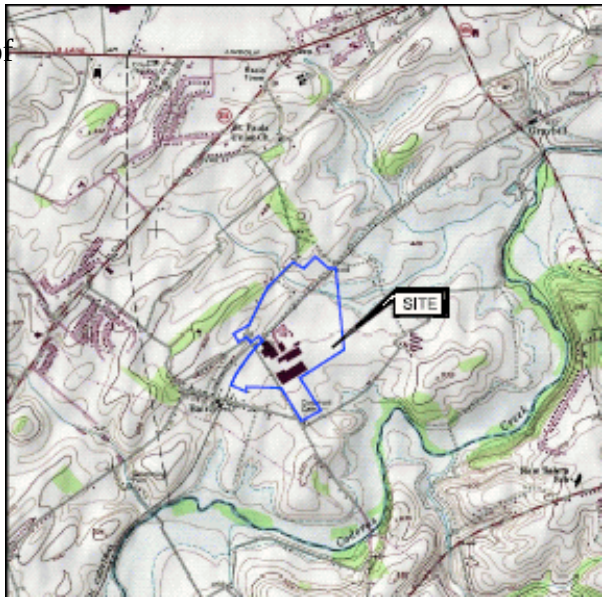
The Facility is subject to the Corrective Action program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act ("RCRA") of 1976, and the Hazardous and Solid Waste Amendments ("HSWA") of 1984, 42 U.S.C. Sections 6901 to 6992k. The Corrective Action program is designed to ensure that facilities have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their property.

In the Commonwealth of Pennsylvania, EPA has delegated most of the RCRA permitting program to the Pennsylvania Department of Environmental Protection ("PADEP") based upon promulgated State regulations which are equivalent to, or more stringent than, the federal requirements. EPA has not, however, delegated the RCRA corrective action requirements, under which this Statement of Basis has been prepared, to the PADEP. In Pennsylvania, EPA administers the RCRA Corrective Action program with authority to require environmental investigations and remedial actions at any facility that applies for a hazardous waste operating permit or otherwise operated under RCRA interim status.

II. Facility Background

The Facility is owned and operated by BAE Systems Land and Armaments, L.P. which currently manufactures armored military vehicles. BAE's manufacturing activities include machining and welding of steel and aluminum, alkaline cleaning and etching, and final finishing and painting. The hazardous wastes generated at the Facility include waste solvents, waste paint and thinner, and metal hydroxide sludge. The largest waste stream is waste water containing chromium, zinc and acids from BAE's metal pre-treatment coating process. The Dip Line process for chromate conversion coating of large aluminum components was discontinued in November 2003. Two Spray Lines for coating small aluminum parts with chromate conversion and for coating small steel parts with zinc phosphate continue

to operate, but are slated for removal in 2005. Rinse waters from these processes are treated at an on-site Wastewater Treatment Plant and discharged under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Pennsylvania Department of Environmental Protection (PADEP). All remaining hazardous wastes are disposed via tank truck or stored in 55-gallon drums or other appropriate containers prior to off-site shipment."



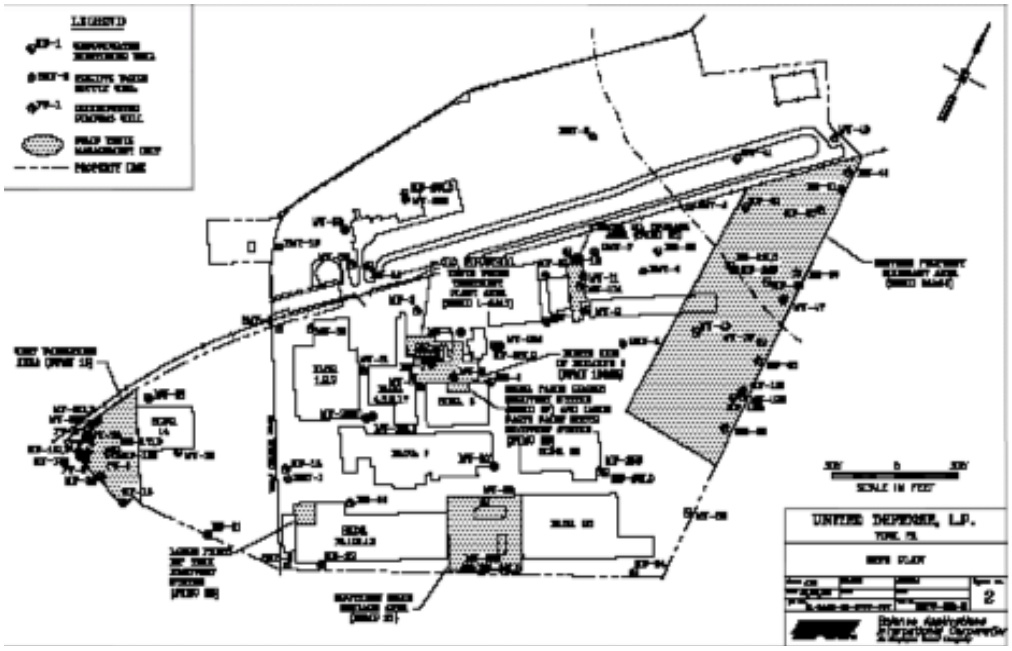
The Facility is located on approximately 135 acres and is approximately 5 miles south of the City of York, Pennsylvania. See Attachment 1.

Areas to the west of the Facility on Bairs Road are currently residential and light industrial. The nearest residence is approximately 1/4 mile north of the Facility. The former Penn Central Railroad right-of-way runs southwest to northeast through the northern portion of the Facility.

The primary direction of groundwater flow beneath the Facility is east-southeast. The Facility does not have any drinking water wells. The United States Department of Agriculture Soil Conservation Service reports that the Facility is underlain by the Conestoga and the Kinzers Formations. The Conestoga Formation was observed during on-site well installation and is a medium to dark bluish-gray limestone with some calcite veins which underlies most of the Facility. The northern portion of the Facility is underlain by two members of the Kinzers Formation - the Kinzers shale, a dark gray to black fissile shale and a dark gray to black crystalline limestone with calcite layers.

III. Summary of the Environmental Investigation

On September 25, 1991, EPA issued a RCRA Corrective Action Permit (the "Permit") under RCRA Section 3004(u), 42 U.S.C. Section 6924(u) to BAE Systems Land and Armaments, L.P., then known as the BMY Division of the HARS CO Corpor ation, for the 135-acre parcel. An 11-acre parcel adjacen t to the south of the Facility is also owned by BAE. The Facility has never used that 11-acre parcel for industria l purposes and the parcel is not subject to the Permit, and, therefore, not presently subject to Corrective Action. The Permit, which on its terms expired on September 25, 2001 but has been extended by EPA until final remedy selection, requires Facility to investigate the extent of environmental contamination at the Facility and evaluate remedy options.



In the Permit, EPA identified 37 Solid Waste Management Units ("SWMUs"). See Attachment 2 for the names and locations of all SWMUs. After BAE conducted a comprehensive investigation of the Facility and implemented several interim cleanup measures, EPA ultimately required BAE to further investigate 17 of the SWMUs at the Facility. After completing all necessary field work, BAE submitted to EPA a RCRA Facility Investigation ("RFI") Report in May 1996 and an RFI Report addendum in December 1998. The RFI and RFI addendum revealed two sources of soil and groundwater contamination at the Facility: (1) the West Warehouse area (SWMU 18) and (2) the area associated with SWMUs 20 and 24. EPA approved the RFI Report and the RFI Addendum in June 1999. BAE submitted a Corrective Measures Study ("CMS") in December 1999.

A. Soil Contamination

1. Arsenic

BAE discovered, during the RFI, that Facility soils contained arsenic at levels below PADEP's Land Recycling Program statewide health level of 12 mg/kg (milligrams/ kilograms) for residential use. EPA typically sets residential levels of arsenic at 20 mg/ kg. Because the PADEP standard for arsenic is more stringent than the federal standard, EPA has applied the PADEP standard to the Facility.

2. Volatile Organic Compounds

Prior to the RFI, BAE discovered that there were two areas of the Facility contaminated with volatile organic compounds (VOCs) including tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE). The levels of these contaminants were sufficiently high that BAE had already initiated interim measures to contain and remove these contaminants from the site soil and groundwater prior to the implementation of the RFI.

One location was at the West Warehouse Area (SWMU-18) where groundwater remediation was already underway. BAE successfully conducted soil remediation via an in-situ soil vacuum extraction (SVE) system from November 1990 to April 1992.

The second location was at the Eastern Property Boundary Area (EPBA) in SWMUs 20 and 24 where groundwater remediation was also underway prior to the RFI. BAE also operated an SVE system from April 1992 until December 1999. During this time, in-situ soils were remediated using SVE technology. Additionally, approximately 375 cubic yards of soil were excavated in 1996 and placed in ex-situ soil cells in order to expedite remedial efforts. In December 1999, both the in-situ and ex-situ soil vapor extraction systems were permanently shut down based on confirmatory soil sampling indicating that soil contaminant levels were below state-wide human health standards established by the

DEP's Land Recycling Program. While the facility is an industrial site, residential cleanup values were used in order to provide a conservative evaluation of the analytical results.

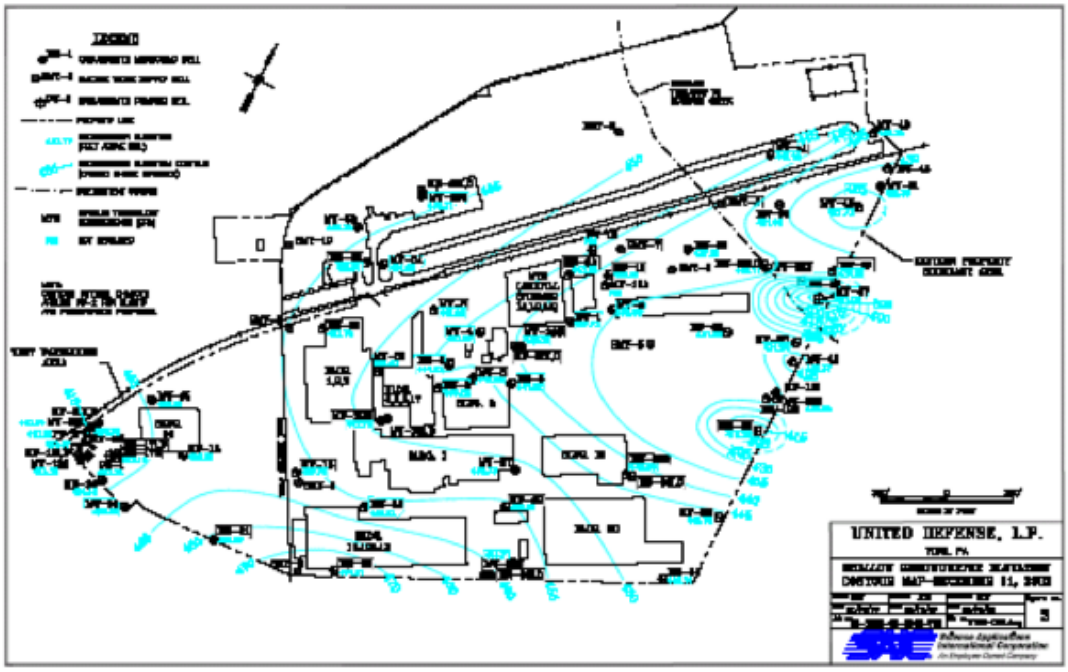
In 1997, BAE also decommissioned its former Industrial Wastewater Treatment Plant, a Sludge Storage Tank, and its Sanitary/Domestic wastewater treatment plant, which were comprised of multiple SWMUs (1 through 6 and 11). Approximately 1,871 tons of non-hazardous debris and soils were disposed of during closure of these systems. Data included in Addendum 1 to the RFI report confirms that the former IWTP was not a source of VOCs.

Maximum pre-remediation and post-remediation total VOC concentrations in soil at the Facility are shown below:

Location of soil remediation	Maximum pre-remediation Total VOC concentrations	Maximum post-remediation Total VOC concentrations
West Warehouse, SWMU#18	2,515 parts per billion (ppb) [August 1988]	<1 ppb [November 1991]
Eastern Property Area (in-situ vacuum extraction)	1,100 ppb [March 1990]	92 ppb [December 1994]
Eastern Property Area (ex-situ vacuum extraction)	5,000 ppm [December 1994]	190 ppb [October 1997]

B. Groundwater Contamination

The groundwater beneath the Facility is contaminated with PCE and TCE from past operations. BAE no longer uses PCE or TCE. Thus, with the soil cleanup completed, no source of VOCs exists at the Facility. See Attachment 3.



BAE installed two separate groundwater remediation systems at the Facility: (1) the West Warehouse Area ("WWA") system in the area of SWMU 18 on May 7, 1990 and (2) the Eastern Property Boundary Area ("EPBA") system in the area of SWMUs 20-24 on March 24, 1992. Both remedial systems collect contaminated groundwater, strip the VOCs with Air Stripping Tower ("AST") technology, and discharge the treated effluent to a storm water channel. The effluent air stream is forced through a Granular-Activated Carbon ("GAC") unit. Both systems still operate and discharge under the PADEP National Discharged Elimination System (NPDES) permit, which PADEP renewed on January 14, 2003.

A total of 10 groundwater monitoring wells and 7 groundwater collection wells are sampled on a quarterly basis as part of the approved by the PADEP NPDES monitoring program.

The total VOC concentrations in the groundwater have steadily declined since the WWA and EPBA

systems began operation. Average total VOCs in the groundwater treated by the WWA system have fallen 95% from 854 parts per billion ("ppb") in 1989 to the 42.3 ppb in December 2003. On average, total VOC levels in the groundwater treated by the EPBA system have decreased 93% from 856 ppb in 1988 to 56 ppb in December 2003.

IV. Proposed Final Remedy

For soils, EPA is proposing no further action because BAE Systems Land and Armaments, L.P has fully remediated the contaminated soils to levels below PADEP statewide health levels through the soil removal project and soil vapor extraction.

For groundwater, the Facility's Groundwater Cleanup Standards consist of the Maximum Contaminant Levels ("MCLs") as established by the Safe Drinking Water Act, 42 U.S.C. Section 300g and the standards for tetrachloroethene ("PCE") 5 ug/l and for trichloroethene ("TCE") 5 ug/l as set forth in 40 C.F.R. Part 264, Appendix IX. BAE will continue to treat and monitor groundwater to address VOC contamination. BAE will conduct groundwater monitoring under its PADEP NPDES permit. The Facility must submit the next renewal application for the NPDES permit by February 2007. The renewed NPDES Permit should be issued by PADEP by September 1, 2007. According to the NPDES Permit, the Facility has to "conduct quarterly sampling and analysis for VOCs at all monitoring and recovery wells associated with groundwater cleanup programs". EPA will oversee the treatment and monitoring activities and evaluate the continued effectiveness of BAE groundwater treatment program.

While on-site groundwater is not currently used as a drinking water source and BAE Systems Land and Armaments, L.P has no plans for such future use, to provide additional protection, the proposed remedy includes institutional controls to prohibit the development of on-site wells for drinking water or other domestic uses at the Facility. The institutional controls will include a notice of use restriction filed on the deed to the Facility. The restriction will be effective as long as necessary to prevent exposure while the plume is being remediated.

V. Evaluation of Criteria

This section provides a description of the criteria EPA uses to evaluate proposed final remedies under the Corrective Action Program. The criteria are applied in two phases. In the first phase, EPA evaluates three remedy threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria to determine which proposed remedy alternative provides the best relative combination of attributes.

A. Threshold Criteria

EPA's evaluation of the threshold criteria follows:

1. Protect human health and the environment

For on-site soils, BAE's interim measures of soil removal and soil vapor extraction have reduced contaminant levels below PADEP's Statewide Health Standards for residential properties while the current and reasonably anticipated land use is industrial. (See Attachment 4.)

For groundwater, the two on-site groundwater treatment systems, which BAE has been operating at the Facility for nearly 15 years, have reduced the mass of contamination remaining on-site and have prevented further migration of contaminants in the groundwater. (See Attachment 5.) The proposed ongoing monitoring program will ensure long-term protectiveness to human health and the environment.

From an ecological standpoint, the Facility is largely covered with structures or pavement, thus there is no habitat or other natural feature that needs to be considered in the remedy. Surface water on the Facility consist of a small tributary to Codorus Creek. EPA has no evidence that there are impacts to the tributary.

2. Achieve media cleanup objectives

The proposed remedy has already reduced contaminants in the soil to below PADEP's Statewide Health Standards for residential properties and total VOC concentrations in the groundwater have steadily declined since the WWA and EPBA systems began operation averaging a 95% and 93% reduction in average total VOCs in the groundwater, respectively.

3. Control the source(s)

BAE's soil removal project and soil vapor extraction have removed the source of contaminants from the soil, thereby, eliminating, to the extent practicable, further releases of hazardous constituents from on-site soils as well as the source of the groundwater contamination. UDLP's groundwater treatment systems have reduced the mass of VOC contamination in the groundwater and have minimized the future migration of contaminants in the groundwater.

B. Balancing Criteria

The EPA is satisfied that the proposed remedy is protective of human health and the environment, an evaluation of other alternatives is not necessary. EPA is not selecting among alternatives, and, therefore, a complete evaluation of the balancing criteria is unnecessary.

Nonetheless, EPA presents the seven criteria below to illustrate the suitability of the proposed remedy:

Because the proposed remedy consists of interim measures which have already been completed and are operating and because EPA is satisfied that the proposed remedy is protective of human health and the environment, EPA is not choosing among alternative remedies. Therefore, an evaluation of the balancing criteria is unnecessary. Nonetheless, EPA presents the seven criteria below to illustrate the suitability of the proposed remedy:

1. Long-Term Reliability and Effectiveness

BAE Systems Land and Armaments, L.P's interim measures have provided a permanent, effective remedy to address soil and groundwater contamination. Groundwater monitoring is confirming the reliability and effectiveness of the groundwater remediation and natural attenuation processes at the Facility. EPA is proposing to keep the remediation systems running until the Groundwater Cleanup Standards are achieved at the Facility.

EPA also considers the restriction of on-site groundwater use for drinking purposes as a long-term component of the remedy. BAE has restricted groundwater use at the Facility and EPA's proposed remedy will require institutional controls to prohibit the development of on-site wells for drinking water or other domestic uses at the Facility.

2. Reduction of Toxicity, Mobility, or Volume of Wastes

The soils removal project greatly reduced the volume of hazardous constituents in the soils. In addition, groundwater monitoring data indicate that natural processes at the Facility are reducing the toxicity of the VOCs. Continued monitoring is expected to confirm this trend.

3. Short-Term Effectiveness

The short-term effectiveness of a remedy is related to the risks posed to the community and workers involved in the design, construction and implementation of the remedy. The short-term risks posed by the proposed remedy for the Facility are minimal. The contaminated soils have been removed therefore, there is no risk of exposure to air borne constituents. With respect to groundwater, the levels of contamination at BAE are being addressed because they exceed the *long-term* exposure represented by anyone drinking the water for a period of years. The only potential short-term exposures to groundwater at the Facility is to workers taking environmental samples or to workers excavating soil in the vicinity of the contaminated plume. Pursuant to the Permit, BAESLA, LP has submitted a Health and Safety Plan to EPA that provides for proper worker training and protective clothing if groundwater exposure is expected. It is also relevant to note that the current levels of groundwater contamination do not represent an immediate threat to anyone who may be exposed during routine sampling or construction activities.

4. Implementability

Implementability includes the technical and administrative feasibility of constructing and

operating the proposed remedy. The proposed remedy for the Facility is both technically and administratively feasible. The groundwater monitoring technology and protocol are already in place and have been approved by EPA. Further, EPA proposes to implement the proposed remedy through a Facility-Lead Agreement with BAE Systems Land and Armaments, L.P. which will include institutional controls. Under this approach, BAE will provide EPA a written commitment to complete the steps outlined in the final remedy. In the event that BAE fails to implement the final remedy as specified in the Facility-Lead Agreement, EPA will take appropriate steps to compel BAE to perform the necessary work.

5. Cost

BAE Systems Land and Armaments, L.P has already expended capital costs in implementing the above described interim measures at the Facility. The additional cost required by operation and maintenance is an efficient use of BAE's resources.

6. Community Acceptance

The local community of York, Pennsylvania evaluated BAE's proposed remedy during the earliest stages of investigations as well as throughout the cleanup and has accepted BAE proposed remedy.

7. State Acceptance

BAE's proposed remedy for the Facility was evaluated and approved by the PADEP prior to EPA's proposing the remedy in this SB. PADEP's approval was included in PADEP's September 1997 approval of the NPDES permit renewal.

VI. Environmental Indicators

EPA has established two environmental indicators that are designated to measure the human health and groundwater impacts of RCRA facilities. These two indicators use environmental data and apply a decision matrix to determine that human health impacts are "under control" and that groundwater contamination is "under control". BAE first met these indicators at the Facility in 1996. EPA believes that these environmental indicators provide additional evidence that the actions completed and proposed for BAE have been effective and will protect human health and the groundwater at the Facility in the long-term.

VII. Public Participation

EPA is requesting comments from the public on its proposal to select groundwater treatment and monitoring obligations with institutional controls as the final remedy for the Facility. On April 15, 2005, EPA placed an announcement in the local newspaper, the York Daily Record, E-mail: http://ydr.com/news/main/, to notify the public of the availability of this Statement of Basis, its supporting Administrative Record and the public's opportunity to request a public meeting on EPA's proposed corrective action for the Facility. The public comments period will last forty-five (45) calender days from the date that this matter is publicly noticed in a local paper. Comments should be sent to EPA in writing at the EPA address listed below, and all commentors will receive a copy of the final decision and a copy of the response to comments.

A public meeting will be held on request. Requests for a public meeting should be made to Ms. Victoria Ioff of the EPA Regional Office at the address listed below or at 215-814-3415.

The Administrative Record contains all information considered when making this proposal. The Administrative record is available for review during business hours at the two following locations:

U.S. EPA Region 3
1650 Arch Street,
Philadelphia, PA 19103
Hours: Mon-Fri, 8:00 A.M. - 4:00 P.M.
Contact: Mrs. Victoria Ioff
Voice: (215) 814-3415
Fax: (215) 814-3113
Hours: Mon-Fri, 9:00 AM - 5:00 PM.
E-mail: ioff.vickie@epa.gov (ASCII text only)

BAE Systems Land and Armaments, L.P.
P.O. Box 15512,
York, PA 17405-1512
Hours: Mon-Fri, 9:00 A.M. - 5:00 P.M.
Contact: Mr. Paul Lagowski
Voice: (717) 225-8059
Email: paul_lagowski@UDLP.com

Following the forty-five day public comment period, EPA will prepare a Final Decision and Response to Comments in which it will identify the selected remedy for the Facility. The Response to Comments will address all significant written comments and any significant oral comments generated at a public meeting if a meeting is held. The Final Decision and Response to Comments will be made available to the public. If, on the basis of such comments or other relevant information, significant changes are proposed to be made to the remedy for the Facility
as proposed by EPA in this Statement of Basis, EPA will seek additional public comments on any proposed revised remedy.

Date:_____ By:_____

James J. Burke, Director
Waste and Chemical ManagementDivision
U.S. EPA, Region III

Attachment 1

Attachment 2

Attachment 3

Attachment 4

Soil Remediation Results

During the soils removal project, UDLP excavated and disposed of soils with

arsenic	11.1mg/kg [0-15 feet]
tetrachloroethene (PCE)	7 mg/kg
trichloroethene (TCE)	5 mg/kg
cis-1,2-dichloroethene (cis-1,2-DCE)	7 mg/kg

A total of 1871 tons of materials were excavated. On-site soil vapor extraction system was was used to reduce VOC sources at the UDLP facility soil.

All soils at the UDLP site were fully remediated to the PADEP Act 2 residential soil standards:

Contaminant	Residential Statewide Health Standard
arsenic	12mg/kg [0-15 feet]
tetrachloroethene (PCE)	5 mg/kg
trichloroethene (TCE)	5 mg/kg
cis-1,2-dichloroethene (cis-1,2-DCE)	70 mg/kg

Attachment 5

Groundwater Sampling Results

2004 groundwater sampling shows:

Contaminant	the Eastern Property Boundary Area ("EPBA")	the West Warehouse Area ("WWA")
tetrachloroethene (PCE)	from 3.3 to 12.5 ppb	from ND to 34.9 ppb
trichloroethene (TCE)	from ND to 20.1 ppb	ND

EPA expected that natural attenuation is proceeding in the UDLP groundwater.

The Groundwater Cleanup Standards shall consist of MCLs Drinking Water standards and the 40 CFR Part 264, Appendix IX which are:

Contaminant	MCLs
tetrachloroethene (PCE)	5ug/l
trichloroethene (TCE)	5ug/l