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First Five-Year Review Report

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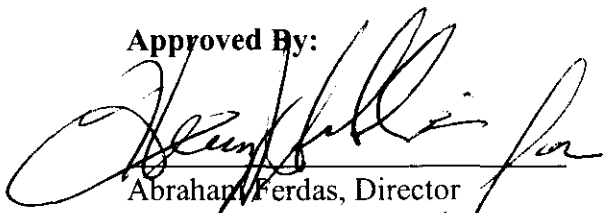
**Dorney Road Landfill
Superfund Site**

**Upper Macungie Township
Lehigh County, PA**

2003

**Prepared By:
Environmental Protection Agency
Philadelphia, PA**

Approved By:



Abraham Ferdas, Director
Hazardous Site Cleanup Division
EPA, Region III

Date:

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Dorney Road Landfill Superfund Site

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List of Acronyms

ARARs	Applicable or relevant and appropriate requirements
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
COC	Contaminant of Concern
COE	U.S. Army Corps of Engineers
EPA	Environmental Protection Agency
ESD	Explanation of Significant Differences
HDPE	High Density Polyethylene
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NLP	National Priorities List
O&M	Operations and Maintenance
OU	Operable Unit
PADEP	Pennsylvania Department of Environmental Protection
PADER	Pennsylvania Department of Environmental Resources
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Responsible Party
RPM	Remedial Project Manager
TAL	Target Analyte List
TCE	Trichloroethene
TCL	Target Compound List
UAO	Unilateral Administrative Order

Executive Summary

The remedy for the Dorney Road Landfill Superfund Site in Upper Macungie, Pennsylvania included regrading and capping of the landfill, institutional controls, and quarterly groundwater monitoring. The site achieved construction completion with the signing of the Preliminary Close Out Report on September 28, 1999. The trigger for this five-year review was the actual start of the construction on April 13, 1998.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the ROD for OU1, dated September 29, 1988 and the ESD, dated September 18, 1991. The quarterly groundwater monitoring is in accordance with the ROD for OU2, dated September 30, 1991. The remedy is functioning as designed with no issues which would compromise the protectiveness of human health and the environment.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Dorney Road Landfill		
EPA ID: PAD980508832		
Region: 3	State: PA	City/County: Upper Macungie Township, Berks and Lehigh
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation Status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?* <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Construction completion date: September 28, 1999	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> NA		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author name: ** Jill S. Lowe		
Author title: Remedial Project Manager	Author Affiliation: U.S. EPA - Region 3	
Review period:*** April 23, 2003 - July 11, 2003		
Date(s) of site inspection: 05/06/2003		
Type of review: <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other(specify) _____		
Triggering action: <input checked="" type="checkbox"/> Actual RA Onsite Construction at OU #1 <input type="checkbox"/> Actual RA Start at OU# _____ <input type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify) <u>Informed public review would be conducted</u>		
Triggering action date: April 13, 1998		
Due date (five years after triggering action date): April 2003		

* ("OU" refers to operable unit.)

** (If a contractor writes the report, the author name should be written as, "RPM w/ (contractor name) assistance.")

*** (Review period should correspond to the actual start and end dates of the Five-Year Review in WastelAN.)

**U.S. Environmental Protection Agency Region III
Five -Year Review Report
Dorney Road Landfill
Superfund Site
Upper Macungie Township,
Lehigh and Berks Counties, Pennsylvania**

I. Introduction

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The Environmental Protection Agency (EPA) is preparing this Five-Year Review report pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

EPA Region III, has conducted a five-year review of the remedial actions implemented at the Dorney Road Landfill Superfund Site in Upper Macungie Township, Berks and Lehigh Counties, Pennsylvania. This review was conducted for the entire site by the Remedial Project Manager (RPM) from April 2003 through June 2003. This report documents the results of the review.

This is the first five-year review for the Dorney Road Landfill site. The triggering action for this statutory review is the initiation of the remedial action on April 13, 1998. The five-year review is required due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

Table 1 lists the chronology of events for the Dorney Road Landfill site.

Table 1: Chronology of Site Events

Event	Date
Site began operating as an open dump disposing in an abandoned iron mine pit	1959
Site operated without a permit	1966-1978
Operations ceased	December 1978
EPA performed a Preliminary Assessment of the site	May 21, 1980
PADEP collected surface and groundwater samples for testing	December 8, 1982
Proposed to NPL List	September 8, 1983
NPL Listing	September 21, 1984
EPA through CERCLA undertook a removal action to prevent the transport of waste off the property by stormwater	June 1986
State-lead RI/FS conducted	1987-1988
Record Of Decision (ROD) signature for OU1	September 29, 1988
Liability Notice Letters sent to Potentially Responsible Parties	September 1989
EPA issued Unilateral Administrative Order (UAO) (EPA Docket No. III-90-45-DC)	September 28, 1990
Boundary survey of apparent wetland was performed by EPA and the U. S. Army Corps of Engineers (COE)	December 31, 1990
Explanation of Significant Differences for OU1	September 18, 1991
ROD signature for OU2	September 30, 1991
Second UAO was issued (EPA Docket No. III-91-29-DC)	January 25, 1992
Remedial Design (RD) initiated for OU1	July 1992

Event	
Third UAO issued (EPA Docket No. III-92-33-DC)	August 13, 1992
Remedial Design started for OU2	May 11, 1993
Remedial Design completed and approved for OU1	June 1995
Remedial Design for OU2 completed and Remedial Action initiated	December 28, 1995
Remedial Action site work commenced for OU1	April 13, 1998
Pre-final Inspection for OU1	September 20, 1999
Construction Complete for OU1	September 28, 1999
Remedial Action for OU2 completed (quarterly sampling ongoing)	March 24, 2000
Remedial Action for OU1 completed	September 27, 2000

III. Background

Physical Characteristics

The Dorney Road Landfill, also known as Oswald Landfill, is located along the southwest boundary of Upper Macungie Township in Lehigh County, Pennsylvania, with a small portion of the site extending into Longswamp Township in Berks County. The site is one mile southwest of Breinigsville and 1.4 miles north-northwest of Mertztown. The site is composed of approximately 27 acres and is surrounded by rural residences and farmland, although housing developments have been constructed near the site in recent years.

Land and Resource Use

The site consists of an abandoned iron mine pit that was used as a landfill, a surrounding soil berm, and adjacent land. Beginning in 1962, the site was operated as an open dump, with the majority of waste disposed in the abandoned iron mine pit. Initially, R. Emory Mabry, and subsequently, Harold Oswald, gradually expanded the unpermitted landfill, accepting a variety of household and industrial waste from regional municipalities and local businesses, until operation ceased in December 1978. The site itself is currently protected by an impermeable cap. The Responsible Parties (RPs) have indicated that there is no reuse anticipated with this site, at this time.

The site is surrounded by rural residences and farmland, although housing developments have been constructed in recent years. The farmland near the site is used to grow crops for human and animal consumption.

The aquifer under the site is the primary source of drinking water for local residents and the farm animals in the area. There are approximately 20 people within a 1/4 mile radius of the site. The nearest resident lives 1,00 feet away from the site in the direction of groundwater flow, which is generally to the southeast in this area.

History of Contamination

In 1986, pursuant to CERCLA, EPA undertook a removal action at the landfill to ensure that landfill-related materials were not transported off of the property by storm water. EPA then divided the remedial work for the landfill into two operable units. Operable Unit 1 (OU1) addresses the landfill and Operable Unit 2 (OU2) addresses the groundwater.

Contaminants in the leachate and groundwater include ketones, vinyl chloride, trichloroethene (TCE), benzene, heavy metals, and arsenic. Soils contain the pesticide, dieldrin, as well as lead and chromium. The apparent source of contamination was the waste buried and dumped on the soil at the landfill.

Initial Response

In January 1970, the Pennsylvania State Health Center notified the landfill owner that the landfill constituted a public health threat and required him to compact the fill and apply cover to the site. A follow-up letter stated that the owner did not comply with the directive.

In June 1970, a representative from the Pennsylvania Department of Environmental Resources (PADER, formerly the Pennsylvania State Health Center) visited the Site and noted the approximate location of an on-site area used for the disposal of sludge. Other visits over the years identified the disposal of petroleum products, asbestos and battery casings.

EPA proposed the site to the National Priorities List (NPL) on September 8, 1983 and added it to the final list on September 21, 1984. A Cooperative Agreement was signed between EPA and PADER, and PADER became the lead agency for work in the Remedial Investigation/Feasibility Study (RI/FS) phase.

An Emergency Removal Action was performed in June 1986 by EPA at the request of PADER. The objective of the removal action was to regrade the site to collect and contain on-site surface runoff. The construction of on-site ponds allowed for controlled discharge of surface runoff via two major spillways. Although a soil cover was applied to portions of the site, the landfill had never been graded and capped, and waste continued to be exposed in areas.

An RI was performed from January to June 1988. Due to difficulties encountered during Phase I activities, additional data needs were identified and investigative activities were proposed as a Phase II RI effort. Results of the RI were presented in the Final Remedial Investigation Report for OU1 dated August 11, 1988. A Feasibility Study for OU1, focusing on the landfill waste, was submitted in August 1988. A Record of Decision (ROD) was issued in September 1988 for OU1.

The second RI/FS was performed by PADER from March to July 1991. The study focused on the groundwater. A ROD for OU2 was issued on September 30, 1991.

Basis for Taking Action

Contaminants in leachate and groundwater include ketones, vinyl chloride, TCE, benzene, and the heavy metal, arsenic. Soils contain the pesticide dieldrin, as well as lead and chromium. The apparent source of contamination was the waste buried and dumped on the soil at the landfill. Before implementation of the landfill remedy, the risks posed by the contaminated on-site solids and ponded waters through dermal contact and incidental ingestion by teenagers and adults were at or in excess of a 10^{-6} excess cancer risk for current use (4×10^{-6} and 3×10^{-5} respectively). Based on future use groundwater ingestion and the inhalation of volatiles while showering, a total lifetime cancer risk of 1.65×10^{-4} was estimated, which is outside of EPA's lifetime cancer risk range. The calculated Hazard Indices based on a combined exposure due to the groundwater ingestion and volatile inhalation exceeded 1.0 for all age groups, which is higher than EPA's guidance level for evaluating non-cancer risks.

IV. Remedial Actions

Remedy Selection

The ROD for OU1 was signed on September 29, 1988. The ROD specified the following components:

- Elimination of on-site ponded water;
- Regrading;
- Multi-layer capping;
- Run-on/off controls;
- Groundwater monitoring;
- Perimeter fencing; and
- Deed notice.

The Remedial Action Objectives (RAOs) for OU1 were:

- control contaminant migration off-site by containment of contaminated landfill soil and waste material;
- prevent dermal contact and incidental ingestion; and,

- prevent continued leaching of precipitation and ponded waters through the contaminated landfill material.

An Explanation of Significant Differences (ESD) for the ROD for OU1 was issued on September 18, 1991. The ESD proposed mitigation for the wetlands located on top of the landfill with a 1:1 replacement.

A ROD for OU2 was issued on September 30, 1991. The ROD specified the following components:

- Wellhead treatment units to be provided to residences if levels of site-related contaminants exceeded action levels;
- Groundwater monitoring.

The RAO for OU2 was to eliminate exposure to contaminated groundwater.

Remedy Implementation

Special Notice letters were issued in September 1989 for OU1. In September 1990, EPA issued a Unilateral Administrative Order (UAO), EPA Docket No. III-90-45-DC, to seven Potentially Responsible Parties (PRPs) after the negotiations were unsuccessful. A second UAO, EPA Docket No. III-91-26-DC, was issued to an eighth Respondent on January 25, 1991. The Orders required the PRPs to implement the remedy described in the ROD for OU1. The remedial action specified in the ESD was incorporated into the UAOs. The Remedial Design was approved by EPA in June 1995.

The Remedial Action (RA) site work for OU1 began in April 1998. The major components of the RA included the following:

- Site clearing which included removal of ponded water, clearing of vegetative cover, chipping woody vegetation, and relocation of fugitive surface debris under the cover system;
- Well abandonment;
- Gas trench construction, which was designed to minimize the lateral flow of landfill gas outside the landfill limits below the surface. The design included a peripheral gas collection trench just beyond the lateral extent of the landfill;
- Landfill regrading to achieve the grades and slopes for the acceptance of the cover system;
- Subgrade preparation which involved grading and placement of compacted general fill;
- Installed first geosynthetic element on the prepared landfill;

- Constructed gas vent layer on top of the landfill. A geocomposite was used as a gas vent layer on the side slopes of the landfill.
- Gas vent collection piping system consisted of flexible 4-inch perforated High Density Polyethylene (HDPE) pipe along the top of the gas trench connected to seventeen 4-inch HDPE conveyance pipes which were connected to seventeen peripheral passive vents along the crest of the cap. On the surface of the cap, an additional fourteen passive gas vents were installed with four horizontal perforated flexible HDPE feeder pipes to collect the gas and vent it passively through vent pipes;
- A geotextile was placed over the gas venting layer prior to installation of the grading layer;
- Two types of geomembrane were installed. A 40 mil smooth HDPE geomembrane was installed where the slopes were minimal and a 40 mil textured HDPE geomembrane was installed on the embankment slopes along the periphery of the landfill;
- On the top of the landfill, a geotextile cushion layer was placed over the geomembrane to protect it from the overlying sand drainage layer;
- A sand drainage layer was put in place and another separation geotextile was put on top of the drainage layer;
- An 18-inch layer of compacted general fill on the cover system and 24-inches of general fill on the cover system slopes serve as the protection layer over the underlying system;
- A vegetative layer was the final cover;
- Surface drainage was designed with five basic drainage patterns. These patterns were rough graded during initial landfill grading operations and incorporated as part of the temporary erosion and sediment control plan. Permanent drainage incorporated the use of stormwater pipes, riprap channels and natural drainage systems;
- Constructed replacement wetlands which also serves as a stormwater drainage area. The replacement wetlands are in year 2 of a 5 year development plan, and;
- A chain link security fence was installed with proper signage.

The contractor conducted the remedial activities basically as designed, with only minor modifications. One unforeseen condition surfaced in the construction of the wetlands. The west pond contained a large rock which had to be excavated with a rock hammer and processed using a rock crusher. This generated approximately 30,000 cubic yards of fill to be used on the general fill layer. Another discrepancy arose with the placement of the permanent fence on Dorney Road. A variance was needed from the Township to construct the fence closer to the street than allowed in

order to avoid puncturing the cap with the fence posts. The variance was granted and the fence was installed according to specifications. During construction of the gas trench, several sink holes developed.

EPA, Pennsylvania Department of Environmental Protection (PADEP, formerly PADER) and the U.S. Army Corps of Engineers (COE) conducted a pre-final inspection on September 20, 1999, which included a description and schedule for correcting minor and major construction items by the contractor. EPA and PADEP approved the operation & maintenance plan for the site.

The baseline residential well sampling, for OU2, was conducted during the first two weeks of March 1999. The ROD and RD required residential groundwater samples to be compared to Action Levels. The baseline results were below the regulated Action Levels, therefore, wellhead treatment units were not required.

A Preliminary Closeout Report was issued on September 28, 1999 for the site.

System Operation/Operation and Maintenance

The RPs are conducting long-term monitoring and maintenance activities at the site in accordance with the operations and maintenance (O&M) section of the EPA approved Remedial Action Work Plan developed in January 1996. The primary activities associated with O&M include the following:

- Visual inspection of the cap with regard to vegetative cover, settlement, stability, and any need for corrective action. In addition, the cap is scheduled for periodic mowing;
- Inspection of the drainage swales for blockage, erosion and instability, and any need for corrective action;
- Inspection of the condition of the groundwater monitoring wells;
- Quarterly groundwater monitoring, which includes monitoring of the landfill wells and residential wells; and
- Engineered wetlands inspection and assessment: Inspections are conducted primarily for the purposes of assessing both weed control needs and the survival of plantings. Assessments are performed to determine if engineered wetlands are meeting the performance standards regarding the survival and density of the desired wetlands species.

The O&M for the landfill (OU1) has proceeded without major issues. The integrity of the cap has been maintained. There have been several sink holes noted in the northern infiltration basin, their location and size were documented. Groundwater sampling results have not been above Action Levels for the landfill wells.

The engineered replacement wetlands is in Year 3 of a five-year performance monitoring and maintenance plan to adequately develop the wetlands. In Year 2, there was a large loss of vegetation in the aquatic emergent zone due to geese infiltration and drought. The area has been replanted, but it is unlikely that it will meet the target coverages specified for the end of Year 3 for just the aquatic emergent zones.

As established in the ROD for OU2, long-term sampling will now be conducted on a quarterly basis on five residences selected based on the previous sampling results. This quarterly sampling will be conducted by the Township of Allentown. The quarterly monitoring will be terminated when data analysis demonstrates the absence of relevant variability on residential well water quality, and /or indicates that the concentration of landfill-related contaminants of concern in residential water supply wells, if any, will remain at or below Action Levels with the use of wellhead treatment systems. There have been no quarterly residential samples which have been above action levels.

The RP estimates that the annual cost for O&M is approximately \$75,000.

V. Progress Since Last Five-Year Review

This was the first five-year review for the Site.

VI. Five-Year Review Process

Administrative Components

The Dorney Road Landfill Five-Year Review team was led by Jill Lowe of EPA, RPM for the Dorney Road Landfill Superfund Site, and included James Harper, EPA, and Ron Schock, the RPM for PADEP.

The site inspection occurred on May 6, 2003 and was conducted by James Harper, with Ron Schock. Representatives from ENVIRON International Corporation and Habitat by Design, the remedial contractors, were present during the inspection.

Community Involvement

A Fact Sheet was sent to the community to gain their involvement in the five-year review process. The Fact Sheet updated the site progress and announced the initiation of the five-year review. Point of contact information was provided.

An advertisement appeared on April 23, 2003 in the Allentown *Morning Call*. The advertisement explained the Five-Year Review process, provided point of contact information, and identified the location of the information repositories for the site. Another notice will be sent to the same newspaper to announce that the Five-Year Review report for the Dorney Road Landfill site has been

completed. Information on the results of the review and the report availability will be part of the announcement.

No feedback from the community was received as a result of either the Fact Sheet or advertisement.

Document Review

The five-year review consisted of a review of relevant documents including the ROD and ESD for OU1, the ROD for OU2, the Preliminary Closeout Report, the Year 2 Performance Monitoring and Maintenance Report for the Replacement Wetland Vegetation, the Remedial Action Construction Verification and Certification Report, as well as the Quarterly Groundwater Monitoring Reports for both OU1 and OU2. A review of deed restrictions was also conducted.

Data Review

Groundwater sampling has been conducted quarterly since March 2000. The sampling is conducted on four landfill monitoring wells, as well as, five residences. Four of the residences sampled are randomly selected from groupings established based on geographical considerations and the results from the baseline sampling conducted in March 1999. The fifth residence sampled, HW-1, is sampled every quarter, since it is the closest residential well to the landfill.

The landfill groundwater samples are analyzed for Target Compound List (TCL) and Drinking Water List VOCs and Target Analyte List (TAL) metals. The residential groundwater samples are analyzed for TCL/Drinking water VOCs. A Type I (Contract Laboratory Program [CLP]-like) data package is provided for both types of groundwater samples.

The VOC concentrations from the landfill monitoring wells have consistently been within the range of historical VOC concentrations detected in groundwater in the landfill area. The concentrations of the detected metals are below action levels and generally within the historical range for groundwater in the landfill area. Occasionally, there are isolated samples that contain levels of a compound outside the normal historical range, but below the Federal Safe Drinking Water Act Maximum Contaminant Level (MCL). The Quarterly Groundwater Monitoring Reports for OU1 contain tables of historical data for all sample locations.

The residential well sampling has not detected any landfill related chemicals of concern (COC) above MCLs. Risk calculations are performed to compare action levels for each of the residential well locations where potential landfill-related COCs were detected. Cumulative risk calculations are performed if an MCL did not exist for a potential landfill-related COC, or if a cumulative risk existed for more than one compound. The risk-based action level for each water supply is identified as a cumulative cancer risk of 1×10^{-4} or a Hazard Index of 1.0. No residential well sampling has exceeded the risk-based action levels established.

EPA has not split samples with the RP during the quartering groundwater monitoring events for either the landfill or the residential monitoring. Split samples are scheduled for the July 2003 sampling event to assess the quality of the data obtained by the PRP.

The OU2 ROD required a deed notice to be placed in the deed of the land within the site boundaries. Deed restrictions were placed on the R.Emory and Alma C. Mabry Estate on May 13, 1991. The description of the deed restriction was Notice of Environmental Administrative Order. There has been no deed restriction to prevent the use of contaminated groundwater from the site, but the PRPs continue to expanded the quarterly residential sampling to include newly constructed homes. Reuse is unlikely for the site, therefore, no groundwater wells will be installed at the site.

Site Inspection

The site inspection occurred on May 6, 2003 and was conducted by James Harper, with Ron Schock. Representatives from ENVIRON International Corporation and Habitat by Design, the remedial contractors, were present during the inspection. The site inspection was conducted using the U.S. Army Corps of Engineers Remediation System Evaluation Checklist. The inspection did not identify any issues with the landfill cap, drainage system, replacement wetlands, or site security.

Interviews

No specific interviews were conducted as part of the five-year review process.

VII. Technical Assessment

Question A: Is the remedy functioning as intended by the decision documents?

Yes. A review of documents, ARARs, and the results of the site inspection indicates that the remedy is functioning as intended by the OU1 ROD, as modified by the ESD. The capping of the landfill has achieved the remedial objectives to control contaminant migration off-site by containment of contaminated landfill soil and waste material, prevent dermal contact and incidental ingestion, and to prevent continued leaching of precipitation and ponded waters through the contaminated landfill material. The implementation of deed restrictions as institutional controls, as well as, the quarterly monitoring, have prevented exposure to, or ingestion of, contaminated groundwater, as outlined in the OU1 ROD.

O&M of the landfill cap, drainage system, and replacement wetlands have been effective. The site inspection did not identify any issues which would compromise the integrity of the landfill cap or the protectiveness of the remedy. O&M annual costs are consistent with the original estimates when corrected for inflation.

The quarterly residential well sampling has been operating as intended in the OU2 ROD. The remedial objective to eliminate contact with contaminated groundwater has been met. No samples taken have been above action levels as determined in the OU2 ROD.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy still valid?

There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy.

Changes in Standards and To Be Considereds

There are no changes to note.

The applicable or relevant and appropriate requirements (ARARs) that were included in the ROD for OU1 have been met and continue to be met through the remedial action. The ARARs include the Clean Air Act, the Pennsylvania Air Pollution Control Act, Pennsylvania Solid Waste Management Act, and the Clean Water Act.

The ARARs for OU2 are being met and are still appropriate. The ROD for OU2 waived the requirement in the Pennsylvania Hazardous Waste Management Regulations which requires remediation of groundwater to background levels and waived the requirement to remediate off-site ground water to MCLs. Both requirements were waived due to technical impracticability. The remedy does comply with MCL's, non-zero Maximum Contaminant Level Goals and EPA Health Advisory levels at the tap. The Safe Drinking Water Act is relevant and appropriate at the tap.

Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

There are no changes to note.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No ecological targets were identified during the baseline risk assessment and none were identified during the five-year review, therefore, monitoring of ecological targets is not necessary. No weather related events have affected the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

VIII. Issues

Issue	Currently Affects Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Split sampling never conducted	N	N

IX. Recommendations and Follow-Up Actions

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Split sampling	Scheduled for July 2003	EPA	EPA	July 2003	N	N

X. Protectiveness Statement

Because the remedial actions at all OUs are protective, the site is protective of human health and the environment. There are no human or environmental receptors exposed to site contaminants. Based on current site ownership and use, the site is expected to remain protective of human health and the environment.

XI. Next Review

The next five-year review for the Dorney Road Landfill Superfund Site is required by July 2008, five years from the date of this review.

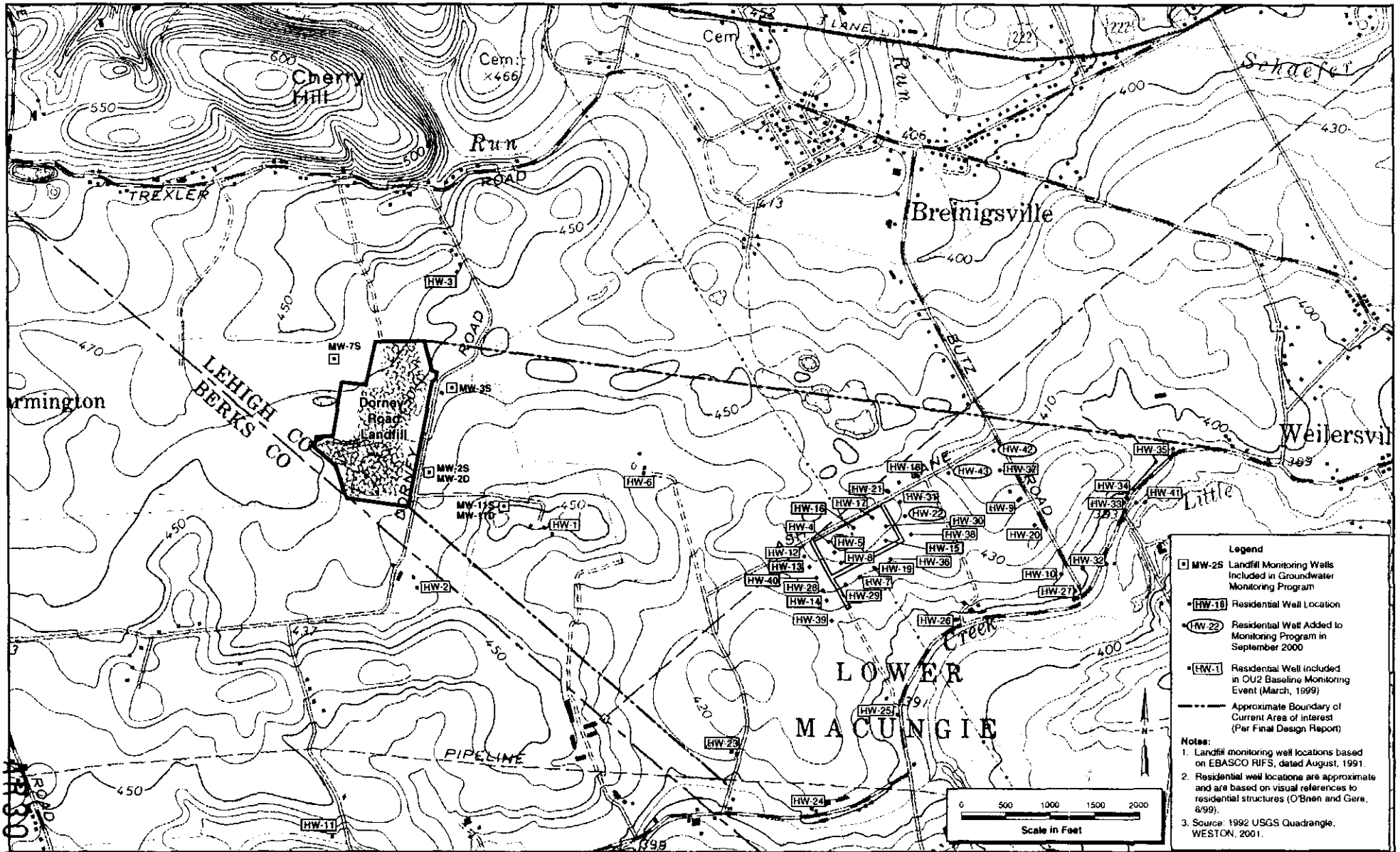


FIGURE 1 RESIDENTIAL AND LANDFILL SAMPLING LOCATIONS