Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Urbana Landfill Site
Town of Urbana, Steuben County
Site Number 8-51-007

March 1998

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* John P. Cahill, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Urbana Landfill Inactive Hazardous Waste Site
Urbana, Steuben County, New York
Site No. 8-51-007

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Urbana Landfill inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40 CFR 300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Urbana Landfill Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened releases of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, present a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Urbana Landfill and the criteria identified for evaluation of alternatives, the NYSDEC has selected proper closure of the landfill and source area treatment. The components of the remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

2. A landfill cover system designed to meet the substantive requirements of 6 NYCRR Part 360.

3. The extent of waste consolidation will be evaluated during design of the remedy. The primary factors to consider during design will include the extent to which consolidation would minimize the potential for future releases of hazardous waste constituents to the environment and the beneficial impacts of consolidation on the long-term operation and maintenance of the remedy.

4. Removal/treatment (likely by soil vapor extraction) of VOC contaminants from the upper terrace of the landfill.

5. Since the remedy results in some untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. A number of existing monitoring wells along with nearby residential wells will be monitored to confirm that the off-site groundwater quality does not deteriorate. In the unlikely event that off-site groundwater quality does deteriorate, additional corrective measures will need to be evaluated.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/30/98
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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RECORD OF DECISION

URBANA LANDFILL
Town of Urbana, Steuben County, New York
Site No. 8-51-007
November 1997

SECTION 1: SITE LOCATION AND DESCRIPTION

The Urbana Landfill (site # 8-51-007) is located on Crows Nest Road, approximately one mile northwest of the Village of Hammondsport and Keuka Lake in Steuben County (Figure 1). The landfill encompasses approximately 20 acres, with about 10 to 15 acres used for waste disposal. The site is bounded on the west by an unnamed stream, on the south by Crows Nest Road, and a private residence to the east (Figure 2). The area surrounding the site is hilly, rural terrain consisting of farmland and wooded areas.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

The site served as the town landfill, receiving wastes from 1968 to 1978. The site received municipal waste from both the Town of Urbana and the Village of Hammondsport during this time. The largest source of industrial waste was reported to be Mercury Aircraft, who, between 1971 and 1978, disposed of an unknown amount of chlorinated solvent still bottoms and paint sludges. The waste allegedly arrived in drums which were then punctured and allowed to drain on the ground. Fan-shaped pits were excavated in the upper portion of the landfill and received both septic sludge and solvent wastes. The remains of these pits are still evident around the landfill.

2.2: Remedial History

In 1982, the site was listed on the state Registry of Inactive Hazardous Waste Disposal Sites as a Class 2a site. Class 2a sites require additional investigation before determining if the site poses a significant threat to the public health or the environment. In 1984, the NYSDEC conducted a Phase II investigation. The NYSDEC and the NYS Department of Health (DOH) conducted additional sampling in 1988 and 1992. In 1994, the site was reclassified to a Class 2, indicating that it poses a significant threat to public health and/or the environment. In March 1995 the site was referred to the State Superfund for a state-funded Remedial Investigation/Feasibility Study (RI/FS).

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, the NYSDEC has recently completed a Remedial Investigation/Feasibility Study (RI/FS).

3.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in two phases. The first phase was conducted between 6/96 and 11/96 and the second phase between 1/97 and 4/97. Reports entitled Remedial Investigation Report, March 1997 and Phase II Investigation Report, August 1997 have been prepared describing the field activities and findings of the RI in detail.

The RI included the following activities:

- Sampling of residential drinking water wells, the unnamed stream to the west of the landfill, and downgradient sediments to determine if any off-site impacts have occurred.
- Installation of soil borings and monitoring wells for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions.
- Excavation of test pits to locate areas of waste disposal.
- Analysis of the landfill gas and soil vapors to determine if any air impacts are likely.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance (SCGs). Groundwater, drinking water and surface water SCGs identified for the Urbana Landfill site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of NYS Sanitary Code. NYSDEC TAGM 4046 soil cleanup guidelines for the protection of groundwater, background conditions, and risk-based remediation criteria were used as SCGs for soil and the Division of Fish and Wildlife Technical Guidance for Screening Contaminated Sediments was used for surface water sediments.

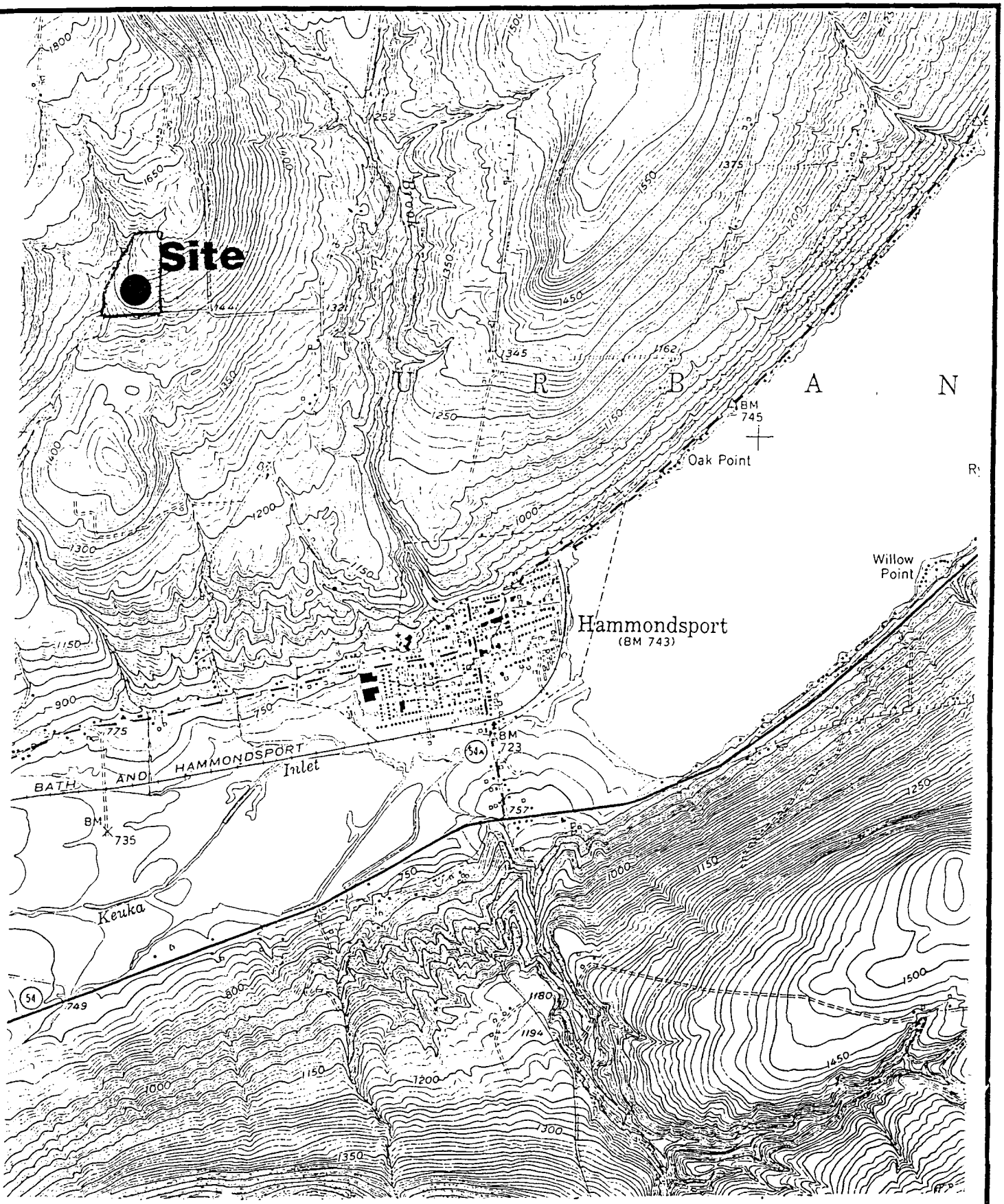
Based upon the results of the Remedial Investigation in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb), parts per million (ppm), and parts per billion by volume (ppbv) for air samples. For comparison purposes, SCGs are given for each medium.

3.1.1 Nature of Contamination:

The site is primarily contaminated with volatile organic compounds. The most contaminated area of the landfill contains chlorinated solvents including trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), and 1,2-dichloroethylene (DCE). The landfill also has several areas contaminated with non-chlorinated solvents including benzene, toluene, ethylbenzene, and xylene (collectively known as BTEX compounds).

As described in the RI Report, many soil, groundwater, soil gas, leachate, and sediment samples were collected at the Site to characterize the nature and extent of contamination. Of all the compounds detected at the site, only low levels of chlorinated solvents have been found migrating from the landfill. While these solvents were detected in both the downgradient groundwater and the adjacent unnamed stream, their impact does not extend much farther than Crows Nest Road and are not considered to currently threaten any private wells.



CDM Camp Dresser & McKee
environmental services

Figure 1
Location Map
Urbana Landfill, Urbana, New York

URBANA LANDFILL SITE PLAN

NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

URBANA LANDFILL SITE
STEUBEN COUNTY, N.Y.
NYSDEC SITE No. 8-51-007

CDM Camp Dresser & McKee

NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: B. MARTINOVICH
DRAWN BY: K. TROERS
CHECKED BY: L. BUTTERMANN
SHEET CHK'D BY:
APPROVED BY:
DATE: NOVEMBER 1997

PROJECT NO. 0697-2003B
FILE NAME: FLATE3

SHEET NO.
FIGURE 2

F = 60'
30 0 60

LEGEND

MW-201S — MONITORING WELL/BORING (D-DEEP, I-INTERMEDIATE, S-SHALLOW)
SPOT ELEVATION
SW/SD — SURFACE WATER AND SEDIMENT SAMPLING LOCATIONS

MW-103S
MW-103D
MW-104S
MW-104D
MW-105S
MW-105D
MW-106S
MW-106D
MW-106I
MW-107D
MW-107S
MW-108S
MW-108D
MW-110S
MW-110D
MW-112S
MW-112D
MW-113S
MW-113D
MW-201D
MW-201S
MW-202S
MW-202D

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FIGURE2
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3.1.2 Extent of Contamination

Table 1 summarizes the nature and extent of contamination for the contaminants of concern in soils, groundwater, sediments, and surface water and compares the data with the proposed remedial action levels (SCGs) for the Site. The following summarize the media which were investigated and the findings of the investigation.

Soil

Surface soils of the existing landfill cover were sampled during the RI. No volatile organics were detected in the surface and shallow subsurface soils. While several metals occasionally exceeded the background concentrations, none of the metals were at concentrations high enough to warrant any concern. These results indicate that casual contact with the existing cover of the landfill does not pose a significant threat to people or wildlife.

Subsurface soils at the site were also sampled during the RI. Unlike the surface of the landfill, the subsurface is contaminated with a variety of compounds, particularly chlorinated solvents. During test pit excavation in the upper terrace of the landfill, total VOC concentrations ranged from 5 ppm (test pit 10, 6 ft depth) to over 50 ppm (test pit 11, 18 ft depth). Chlorinated solvents (TCE and DCE) are the main contaminants in these samples, with TCE levels up to 15 ppm and DCE as high as 22 ppm in separate samples. BTEX compounds were also detected in the upper terrace test pits with a single sample as high as 26 ppm. In other areas of the landfill, xylene was detected in two subsurface soil samples at 2 and 3 ppm. A number of subsurface samples contained metals at concentrations higher than the background levels. These levels are not abnormal for a typical landfill and none of the subsurface samples contained metals at levels high enough to warrant special concern. However, the levels of VOCs found in the subsurface indicate the presence of several source areas that may be contributing to groundwater contamination beneath the landfill.

The upper terrace of the landfill contains the most highly contaminated soils. This area was the former sludge disposal area and has apparently received a large amount of chlorinated solvent wastes. Test pit samples from the upper terrace indicated TCE concentrations up to 15 ppm, and DCE up to 22 ppm. The other source areas in the landfill are much smaller in size and do not appear to contain significant amounts of chlorinated solvents. Only the source area in the upper terrace of the landfill appears to be contributing significantly to off-site groundwater contamination.

Wastes in the upper terrace are above the permanent water table but do contain perched groundwater. If an impermeable cover was placed over this area, this perched water should eventually drain away.

Groundwater

The groundwater below the landfill is contaminated with a mixture of compounds, but primarily chlorinated solvents. The major contaminants in the groundwater are TCE (up to 3,600 ppb),TCA (up to 3,900 ppb), and DCE (up to 1200 ppb). These compounds were detected in 10 different wells around the landfill. The most contaminated area was the upper terrace (8,900 ppb total VOCs in well MW-103S), with lower levels detected along the western slope of the landfill (1,800 ppb in MW-107S and 1,069 ppb in MW-108S). BTEX compounds were detected in the groundwater in only two wells. One of these samples (MW103S) showed low-levels of benzene, toluene, and xylene contamination in the lower terrace of the landfill.

The off-site groundwater is marginally contaminated with chlorinated solvents. Well MW-202S, located just west of the unnamed stream, contained only 51 ppb of total VOCs. The quick drop in contaminant levels away

from the landfill indicates a small, localized offsite plume that probably does not extend more than a few hundred feet from the toe of the landfill.

The groundwater beneath and around the landfill does contain elevated levels of certain metals. Like the soils, the groundwater contamination by metals is not abnormal for a typical landfill. Hazardous metals such as chromium, lead, or mercury were not detected above background levels.

Surface Water and Sediments

Landfill wastes are exposed along the western edge of the landfill, bordering the unnamed stream. In some areas, these wastes are located right along the stream bank. Both surface water and sediments from the adjacent stream were analyzed during the RI. The results indicate a minor impact from the landfill on the stream. Trace levels of DCE and TCE were detected in the adjacent stream water, but not in the sediment.

The stream was also contaminated with metals at levels above background. Like the soil and groundwater results, the contamination found is typical for a landfill and does not indicate gross contamination with heavy metals.

Leachate

Several water seeps from the landfill surface were sampled during the RI. None of the surface seep samples revealed any VOC contamination. Several metals were detected in the water above background levels. Once again, the levels are typical of a municipal landfill and do not indicate gross contamination from heavy metals.

Soil Vapor and Landfill Gas

Numerous soil vapor and landfill gas samples were collected around the landfill during the RI. The soil gas results were used to identify several "hot spots" in the landfill where VOC contamination is likely to be found. The results indicate that the upper terrace and western slope of the landfill are contaminated with chlorinated solvents, results that are confirmed by similar discoveries in the groundwater. The soil gas also indicates several hot spots contaminated with BTEX compounds. These compounds were detected mainly in the lower and middle terraces of the landfill. More detail on the delineation and location of the hot spots can be found in Section 3.3 of the Feasibility Study Report.

3.2 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 6 of the RI Report.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways which are known to or may exist at the site include:

- **Ingestion:** Groundwater beneath and immediately adjacent to the landfill is contaminated with chlorinated solvents. This is a *potential* exposure pathway; there are no local residents currently consuming contaminated groundwater.

Table 1: Summary of Representative Contaminants Detected in Various Media
Urbana Landfill Site (No. 8-51-007)

Surface Soil

Contaminant	Concentration Range, ppm			SCG (ppm)	No. that Exceed	No. of Samples
	Minimum	Maximum	Average			
Iron	20800	35600	28760	20800	4	5
Nickel	17	31	26	13	5	5
Zinc	69	98	80	69	4	5

Subsurface Soil/Waste

Contaminant	Concentration Range, ppb			SCG (ppb)	No. that Exceed	No. of Samples
	Minimum	Maximum	Average			
1,2-Dichloroethene (total)	8	22000	1404	300	5	19
Trichloroethene	4	15000	1159	700	4	19
1,1,1-Trichloroethane	1	1800	318	760	3	19
Toluene	2	12000	1047	1500	2	19
Xylene	11	14000	1819	1200	6	19

Groundwater

Contaminant	Concentration Range, ppb			SCG (ppb)	No. that Exceed	No. of Samples
	Minimum	Maximum	Average			
1,2-Dichloroethene (total)	1	1200	138.5	5	7	28
Trichloroethene	1	3600	218.0	5	7	28
1,1,1-Trichloroethane	1	3900	191.0	5	5	28
Vinyl Chloride	1	200	18.3	2	6	28
Toluene	1	200	8.8	5	3	28
Xylene	1	200	13.8	5	3	28

Surface Water

Contaminant	Concentration Range, ppb			SCG (ppb)	No. that Exceed	No. of Samples
	Minimum	Maximum	Average			
1,2-Dichloroethene (total)	0.5	8.0	2.0	5	3	14
Trichloroethene	1	2.0	1.1	11	0	14
Aluminum	19.3	269.0	89.4	100	4	14
Iron	1	2350.0	330.1	300	3	14

Sediments

Contaminant	Concentration Range, ppm			SCG (ppm)	No. that Exceed	No. of Samples
	Minimum	Maximum	Average			
Arsenic	1	10.1	4.9	6	3	8
Iron	1	31900.0	16300.1	20000	2	8
Nickel	1	29.2	15.6	16	4	8

- **Inhalation:** The landfill gas is contaminated with hazardous vapors. Completion of this pathway has not been confirmed during the RI. However, the *potential* exists that neighboring residents could inhale hazardous chemicals transported through the landfill gas. The *potential* also exists that neighboring residents may experience landfill gas accumulating in their indoor air. Indoor air contamination has not been demonstrated, but is a possible future exposure route.

- **Direct Contact:** Direct contact with contaminants at the Urbana Landfill is an *unlikely* but possible exposure scenario. The surface cover of the landfill is not significantly contaminated and a person would have to excavate into the landfill to directly contact the wastes present.

  People and wildlife can come into direct contact with contaminated water in the neighboring stream. However, the concentrations are low and the area involved is small and remote. These conditions reduce the significance of this pathway.

3.3 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures which may be presented by the site. The following pathways for environmental exposure have been identified:

Significant Habitat: There are no identified sensitive habitats or endangered species in the vicinity of the site. The nearest regulated wetland is approximately 1½ miles south of the site along the Keuka Inlet. This wetland is not currently being impacted by the landfill, but is fed by the unnamed stream adjacent to the landfill. If a large amount of contamination were released from the landfill into the stream, the likelihood of impacting the wetland would be significantly greater.

Aquatic Organisms in Unnamed Stream: The adjacent unnamed stream has been impacted by the landfill. The extent of the impact is minor and does not currently exceed SCGs for the chlorinated solvents. Any solvents that do enter the stream are most likely volatilized by the turbulent flow of the stream and do not remain in the water for very long. The *potential* does exist however for a significant impact to occur. If a larger amount of contamination were to be released from the landfill, the threat to aquatic life in the stream would be increased.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potentially Responsible Parties (PRP) for the site, documented to date, include: Mercury Aircraft, the current owner (Steve and Tammie Perkins); the owner/operator (Francis Smith). Other major generators of waste include: the Town of Urbana, the Village of Hammondsport, and local wineries (Gold Seal, Taylor, etc.)

The PRPs failed to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria, and Guidance (SCGs) and be protective of human health and the environment.

At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Reduce, control, or eliminate to the extent practicable the contamination present within the landfill mass.
- Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site and reduce the release of contaminated groundwater to the stream.
- Eliminate the potential for direct human or animal contact with the contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- Prevent, to the extent possible, migration of contaminants in the landfill to groundwater.
- Provide for attainment of SCGs for groundwater quality at the limits of the area of concern (AOC), to the extent practicable.
- Eliminate uncontrolled emissions of landfill gases that could pose a risk to current and future residents.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Urbana Landfill site were identified, screened and evaluated in the Feasibility Study Report, November 1997.

A presumptive remedy is one that historically has been shown to be appropriate for a specific type of site. The EPA has issued a presumptive remedy guidance for municipal landfills. The guidance indicates that proper capping of a municipal landfill should be the preferred remedy. The guidance further states that the landfill waste mass should not be treated unless a specific area can be targeted with reasonable assurance that the treatment will improve groundwater quality.

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to construct the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated soils, sediments, surface water and groundwater at the site.

#1 No Action

Present Worth:	$430,000
Capital Cost:	$0
Average Annual O&M:	$31,300
Time to Implement	less than 1 year

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment. The Feasibility Study also evaluated the construction of fencing around the site. If installed, fencing would add about $90,000 in capital costs and $1,000 in annual O&M costs for occasional fence repairs.

#2 Part 360 Landfill Cap and Groundwater Monitoring

Present Worth:	$5,480,000 (see text)
Capital Cost:	$4,788,900
Average Annual O&M:	$50,300
Time to Implement	2 years

This alternative would include the construction of a landfill cap in compliance with the substantive requirements of the Part 360 regulations and the USEPA presumptive remedy guidance. The cap would serve to properly close the landfill and minimize the possibility that people or wildlife would come into contact with the landfill waste material. Once the cap is in place, it would also serve to minimize the amount of rain and snow that percolates through the waste mass, carrying contamination down into the groundwater.

The Part 360 cap would encounter some technical difficulties during construction. Due to the current contours of the landfill, some waste material would need to be excavated, consolidated, and regraded to maintain acceptable slopes and to prevent releases to the adjacent stream. This excavation would be especially difficult along the steep western edge of the landfill and would increase the possibility of some waste material falling into the unnamed stream. These difficulties could be overcome and extra precautions could be taken to prevent contamination of the stream.

Nothing would be done to actually treat the hazardous wastes in the landfill. They would simply be contained within the cap and their potential to migrate would be greatly reduced.

A long-term groundwater monitoring program would be instituted. Existing monitoring wells along with nearby residential wells would be monitored to confirm that the off-site groundwater quality does not deteriorate. In the unlikely event that off-site groundwater quality does deteriorate, additional corrective measures would need to be evaluated.

The cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually occurs, the final cost of the remedy will more likely be between $2,250,000 and $3,500,000, possibly lower.

#3 **Part 360 Landfill Cap with Soil Vapor Extraction and Groundwater Monitoring**

Present Worth:	$5,880,000 (see text)
Capital Cost:	$5,254,000
Average Annual O&M:	$45,250
Time to Implement	2 years

This alternative would include the construction of a landfill cap in compliance with the substantive requirements of the Part 360 regulations and the USEPA presumptive remedy guidance. The cap would be identical to the one proposed in Alternative 2 and would confront the same difficulties in contouring and regrading the waste.

In addition to the cap, contaminants from the upper terrace of the landfill would be removed or treated. This could be done using a soil vapor extraction system installed beneath the landfill cap. The system would utilize a vacuum to evaporate and withdraw the volatile compounds from the soil. The withdrawn air stream would be passed through a treatment system to remove the hazardous vapors before it is released to the atmosphere. When the soil vapor treatment is complete, the collection piping would be abandoned in place. This additional measure of treatment would affect the area most highly contaminated with chlorinated solvents and reduce the amount of hazardous waste left in the landfill. The Department believes that treatment of this source area would help to reduce the concentrations of chlorinated compounds in the off-site groundwater.

During the RI/FS, an evaluation was completed regarding the need for active landfill gas collection and treatment. It was concluded that landfill gas emissions could create exceedances of ambient air concentration guidelines. A solution would be to install and operate a gas collection and treatment system for the entire site. At this site, however, the hot spot in the upper terrace is believed to be the major contributor to adverse air emissions. Therefore, this alternative includes vapor collection and treatment just for the hot spot in the upper terrace. This targeted approach would be more cost effective than actively venting and treating landfill gas from the whole site.

SVE treatment was not considered for the other hot spots in the landfill because it is not likely that remediation of these areas would significantly improve site conditions. For example, they are characterized as containing primarily BTEX compounds, which have not been detected in the off-site groundwater. In accordance with the EPA presumptive remedy guidance, source area treatment should be pursued when a specific area can be targeted and an appreciable benefit can be derived. Therefore, since it is unlikely that significant benefits to site conditions would result, the other hot spots were not considered for SVE treatment.

Other source treatment alternatives were addressed in the FS including off-site disposal of waste materials and biological treatment of the hot spots. Off-site disposal was discarded as being too costly to implement. Biological treatments were discarded because the chlorinated solvents to be remediated are resistant to simple biological treatments. In both cases, SVE treatment should be more effective and cheaper to implement.

A long-term groundwater monitoring program would also be instituted. Existing monitoring wells along with nearby residential wells would be monitored to confirm that the off-site groundwater quality does not deteriorate. In the unlikely event that off-site groundwater quality does deteriorate, additional corrective measures would need to be evaluated.

The cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually

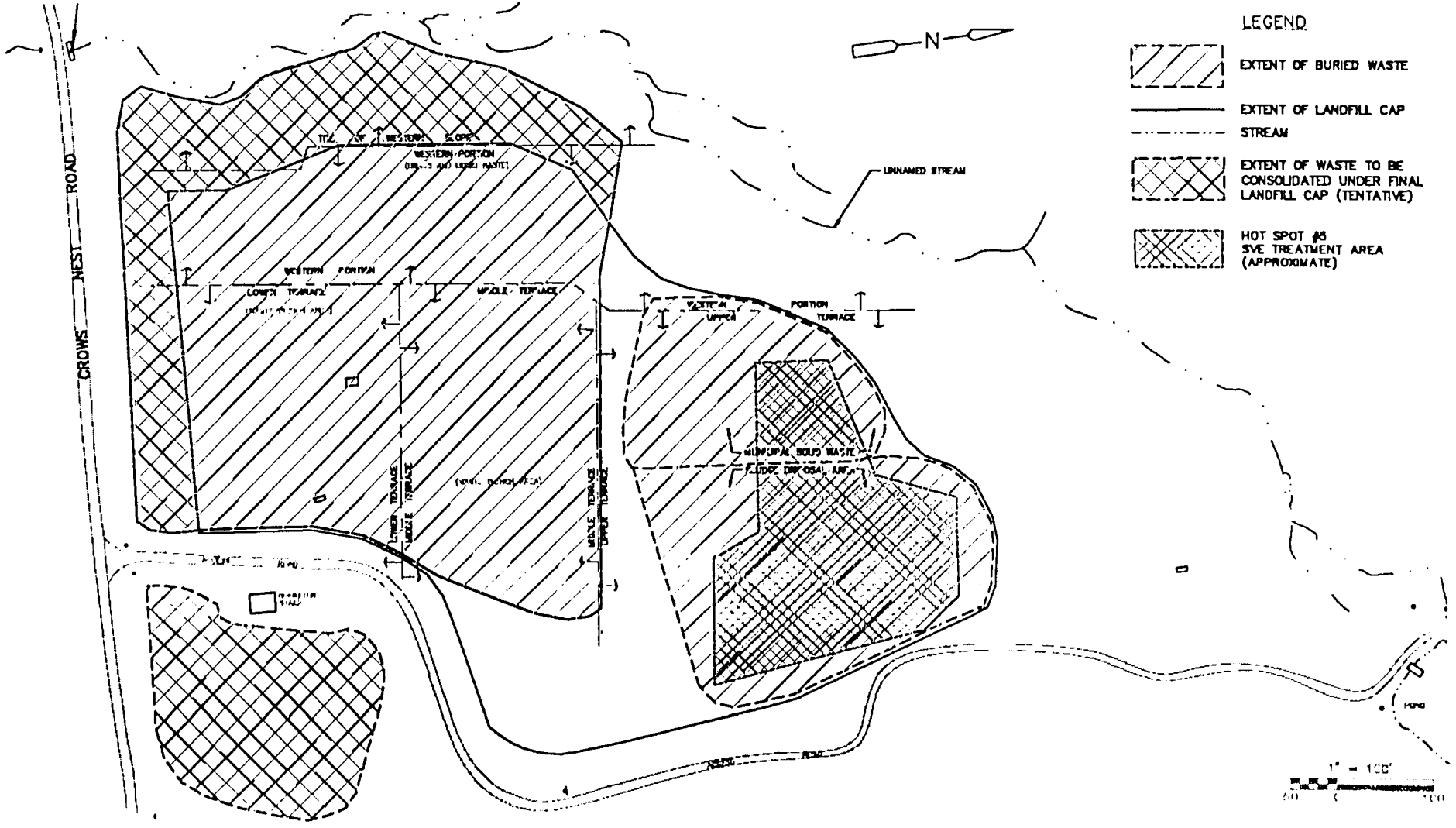

Figure 3
Extent of Buried Waste and Part 360 Cap
Urbana Landfill Record of Decision

occurs, the final cost of the remedy will more likely be between $2,750,000 and $4,000,000, possibly lower.

6.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance. The major SCGs to consider for the Urbana Landfill relate to the concentrations of chlorinated solvents in groundwater, regulations regarding the protection of surface waters, the USEPA Presumptive Remedy Guidance, and landfill cover system regulations.

The no action alternative would not meet any of these SCGs.

For Alternatives 2 and 3, a landfill cover system would comply with the presumptive remedy guidance and would be designed according to applicable standards. Its effectiveness at achieving groundwater standards in off-site groundwater is unknown. While it would eliminate the percolation of rain and snow melt through the landfill mass, how much the reduced infiltration would reduce the levels of off-site groundwater contamination is unknown. A landfill cover system alone would not prevent the chlorinated solvents from being emitted with the landfill gases. If the landfill gases were to exceed air quality SCGs, additional landfill gas treatment would be necessary. An alternative method for treating the landfill gases would be to actively collect the gases from the entire site for treatment.

The addition of a soil vapor extraction system in Alternative 3 should help to reduce the off-site groundwater contamination. The off-site groundwater is contaminated exclusively with chlorinated solvents. Since the SVE system would focus on the only known chlorinated solvent source area, it should remove most of the contaminants that are impacting the off-site groundwater. Inclusion of a SVE component would also help to ensure that air quality SCGs are not exceeded. By removing the contaminants that could potentially cause a problem, the SVE system would negate the need for treatment of large volumes of landfill gas in the future.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Alternative 1 is not considered protective of human health and the environment.

In Alternatives 2 and 3, the landfill cover system would be partially protective at this particular site. It would prevent direct contact with the waste mass and help to control landfill gas emissions, but would not clean up the landfill gas emissions and would most likely result in a continuing off-site groundwater problem.

Alternative 3 is considered to be more protective than Alternative 2 due to the addition of a SVE system instead of the landfill cap alone. The SVE system would provide two benefits. First, it should help to reduce the off-

site groundwater plume. Second, since the major source area of the landfill would be treated, the possibility of the chlorinated solvents being emitted with landfill gases would be greatly reduced.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 and 3 have the potential for adverse effects on the community and the environment. These risks are associated with dust, airborne contaminants, and possible stream contamination resulting from regrading the waste material and constructing the landfill cap. These risks are readily controlled by implementing standard construction practices for dust and erosion control.

The soil vapor extraction component of Alternative 3 poses a short-term risk from hazardous air emissions. These emissions are also easily controlled by the addition of a vapor treatment system, typically activated carbon canisters.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 1 provides no additional long-term effectiveness and would leave the landfill in its current condition.

The landfill cover component of Alternatives 2 and 3 would be an effective long-term solution to reducing leachate generation and contact with the waste materials, provided that the cap is properly maintained. The maintenance requirement is a significant one and would be required in order to ensure the continued integrity of the cap. While the cap is a long-term solution to prevent direct contact and leachate generation, there is no guarantee that the cap alone would reduce the levels of off-site groundwater contamination or would prevent exceedences of air quality SCGs.

In Alternative 3, the soil vapor extraction system would not require any long-term maintenance, as it is expected to operate for about one year. The removal of contaminants from the landfill by the SVE system should provide long-term benefits, however. By treating the largest source area in the landfill, the off-site groundwater contamination should be permanently reduced and any necessity for site-wide landfill gas treatment should be eliminated.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternatives 1 and 2 do not reduce the toxicity or volume of wastes present in the landfill. The no action alternative also does not reduce the mobility of the wastes. A landfill cover would moderately reduce the mobility of wastes due to reduced infiltration of rain and snow water.

The SVE component of Alternative 3 would reduce the volume and toxicity of the wastes in the landfill. By removing the most significant wastes from the landfill, they would no longer be a continuing source of contamination.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

None of the alternatives would present any administrative difficulties.

Alternatives 2 and 3 would encounter some technical difficulties during construction of the landfill cover. Due to the current contours of the landfill, waste material will likely need to be excavated, consolidated, and regraded to maintain acceptable slopes and to prevent releases to the adjacent stream. This excavation would be especially difficult along the western edge of the landfill, where some waste materials are located immediately adjacent to the stream and rise steeply to the surface of the landfill. Excavating these areas would increase the possibility of some waste material accidentally falling into the unnamed stream. These difficulties could be overcome and extra precautions could be taken to prevent contamination of the stream.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 2. The cost difference in alternatives 2 and 3 is about $400,000, or approximately a 7% increase in cost to choose alternative 3 over 2.

The costs presented in Table 2 were developed from the estimate generated during the Feasibility Study. The cost estimates make a number of conservative assumptions. Most importantly, the costs are based on the assumptions that extensive waste consolidation and regrading will be needed and that a standard Part 360 landfill cover will be constructed. Since the costs are very sensitive to both of these items, significant cost reductions may be realized when the actual extent of consolidation is determined. Likewise, any variations to the standard Part 360 landfill cover can generate additional cost reductions.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is focused upon after public comments on the Proposed Remedial Action Plan have been received.

8. **Community Acceptance** - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised.

In general the public comments received were supportive of the selected remedy. Several comments were received, however, that questioned the components and extent of the proposed cover system.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative #3 as the remedy for this site.

Alternative 1 is not protective of the environment or human health, nor would it meet any of the SCGs for the site. Alternative 1 cannot be selected.

Alternatives 2 and 3 both include the construction of a landfill cover system, requiring effort to consolidate and regrade the waste. The difference between alternatives 2 and 3 would include the installation of an SVE system in Alternative 3.

Adding the SVE component will provide several benefits. First, using SVE in the hot spot in the upper terrace will be much more efficient than building and operating a site-wide active landfill gas collection and treatment system. Second, the SVE system will remove contaminants much more quickly than a typical gas collection system which will in turn reduce operation and maintenance costs. Third, the direct removal of contaminants should reduce the mass of contaminants ultimately released to groundwater. This should result in improved groundwater conditions on site and off site. Lastly, since the hot spot is limited in size and is accessible, installation, operation, and decommissioning will be straightforward and cost effective.

Because both SVE and landfill cover systems are common technologies, the implementability of Alternatives 2 and 3 are essentially equivalent.

Since the SVE system will eliminate any requirements for long-term landfill gas treatment and also provide the additional benefits mentioned, the additional cost of Alternative 3 (7% increase) is a reasonable increase over Alternative 2.

The estimated present worth cost to implement the remedy is $5,880,000. The cost to construct the remedy is estimated to be $5,254,000 and the estimated average annual operation and maintenance cost for 30 years is $45,250. The actual cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually occurs, the final cost of the remedy will more likely be between $2,750,000 and $4,000,000, possibly lower.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

2. A landfill cover system designed to meet the substantive requirements of 6 NYCRR Part 360.

3. The extent of waste consolidation will be evaluated during design of the remedy. The primary factors to consider during design will include the extent to which consolidation would minimize the potential for future releases of hazardous waste constituents to the environment and the beneficial impacts of consolidation on the long-term operation and maintenance of the remedy.

4. Removal/treatment (likely by soil vapor extraction) of VOC contaminants from the upper terrace of the landfill.

5. Since the remedy results in some untreated hazardous waste remaining at the site, a long term monitoring program will be instituted. A number of existing monitoring wells along with nearby residential wells will be monitored to confirm that the off-site groundwater quality does not deteriorate. In the unlikely event that off-site groundwater quality does deteriorate, additional corrective measures will need to be evaluated.

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
#1 No Further Action: Institutional Controls, and Groundwater Monitoring	$0	$66,000 (year 1-5) $16,000 (year 6-30)	$430,000
#2 Part 360 Landfill Cap and Groundwater Monitoring With Variances	$4,788,900	$85,000 (year 1-5) $35,000 (year 6-30)	$5,480,000 $2,250,000 to $3,500,000, possibly lower
#3 Part 360 Landfill Cap, Soil Vapor Extraction, and Groundwater Monitoring With Variances	$5,254,000	$188,000 (year 1) $72,000 (year 2-5) $22,000 (year 6-30)	$5,880,000 $2,750,000 to $4,000,000, possibly lower

7.1 Documentation of Significant Changes

Based on comments received during the comment period, the Department has decided to adopt four changes in the remedy. The first of these changes relates to the type of cover system specified for the landfill. The Department has decided to consider variations from the standard Part 360 landfill cover requirements in an effort to reduce the cost of construction. In some locations, the existing cover of the landfill can be safely augmented by other materials, reducing the need to import large amounts of cover material to the site. The resulting combination of existing and new materials could be designed to meet the substantive requirements of the Part 360 regulations to ensure the long-term durability and reliability of the cover.

The Department has also reconsidered its intention to consolidate and regrade large amounts of waste material from the property boundaries and the western slope. Comments received suggest that the western slope and adjacent stream can be adequately protected by capping the wastes in place and strengthening the resulting face of the landfill. However, the Department believes the long-term maintenance issues associated with slope stability and operations and maintenance (O&M) must be balanced with the short-term construction cost. The Department maintains that some amount of waste consolidation will be necessary, especially in the immediate vicinity of the stream bed. The actual extent of waste consolidation will be determined during design. The primary factors to be considered will include the extent to which consolidation would minimize the potential for future releases of hazardous waste constituents to the environment and the beneficial impacts of consolidation on the long-term operation and maintenance of the remedy.

The third modification of the remedy involves the remediation of the upper terrace hot spot. Comments suggest that the VOC hot spot in the upper terrace can be remediated without using soil vapor extraction (SVE) technology. The Department agrees that other technologies may work equally well and is willing to consider others if appropriate. A number of technologies were studied in the FS and SVE appeared to be the most reliable technology available. Until other technologies are presented to the Department for evaluation, the Department maintains that SVE is the most desirable.

The costs of the remedy as presented in the ROD reflect the variability associated with the final design of the landfill cover. The costs presented in Table 2 were developed from the estimate generated during the Feasibility Study. The cost estimates make a number of conservative assumptions. Most importantly, the costs are based on the assumptions that extensive waste consolidation and regrading will be needed and that a standard Part 360 landfill cover will be constructed. Since the costs are very sensitive to both of these items, significant cost reductions may be realized when the actual extent of consolidation is determined. Likewise, any variations to the standard Part 360 landfill cover can generate additional cost reductions. As a result, the cost of the selected remedy may be closer to the range of $2,750,000 to $4,000,000, possibly lower.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials local media and other interested parties.
- Fact Sheets were prepared and mailed in May 1996, April 1997, and December 1997.

- A Public Meeting was held in May 1997 to discuss the results of the Remedial Investigation (RI).
- A Public Meeting was held in December 1997 to discuss the results of the RI/FS and to present the Department's Proposed Remedial Action Plan to the public.
- In March 1998, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP. (Appendix A)

Appendix A
Responsiveness Summary
Urbana Landfill Site
Site # 8-51-007, Steuben County

This Appendix summarizes the comments and questions received by the New York State Department of Environmental Conservation (NYSDEC) regarding the Proposed Remedial Action Plan (PRAP) for the Urbana Landfill site. A public comment period to receive comments on the PRAP opened on December 5, 1997 and closed on January 5, 1998. By request, the public comment period was extended an additional 30 days, until February 4, 1998. A public meeting was held on December 17, 1997 at the Urbana Town Hall, Hammondsport, New York, to present the results of the Remedial Investigation/Feasibility Study (RI/FS) performed at the site and to describe the details of the proposed remedy. The public meeting was attended by more than 20 people and included elected officials from the Towns and Villages impacted from the site. This Responsiveness Summary addresses the public comments and questions received by NYSDEC at the public meeting and provides the Department's responses.

DESCRIPTION OF THE SELECTED REMEDY

The major elements of the selected remedy include:

1. A **remedial design** program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

2. A **landfill cover system** designed to meet the substantive requirements of 6 NYCRR Part 360.

3. The extent of **waste consolidation** will be evaluated during design of the remedy. The primary factors to consider during design will include the extent to which consolidation would minimize the potential for future releases of hazardous waste constituents to the environment and the beneficial impacts of consolidation on the long-term operation and maintenance of the remedy.

4. Removal/treatment (likely by **soil vapor extraction**) of VOC contaminants from the upper terrace of the landfill.

5. Since the remedy results in some untreated hazardous waste remaining at the site, a **long term monitoring program** will be instituted. A number of existing monitoring wells along with nearby residential wells will be monitored to confirm that the off-site groundwater quality does not deteriorate. In the unlikely event that off-site groundwater quality does deteriorate, additional corrective measures will need to be evaluated.

The information given below is summarized from the March 4, 1997 public meeting and letters received during the comment period. The issues raised have been grouped into the following categories:

I. Questions/Comments Raised During the Public Meeting

   A. Issues Regarding the Overall Remedy
   B. Issues Regarding the Landfill Cap

C. Issues Regarding Financing of the Remedy
D. Issues of a General Nature

II. Letters Received During the Comment Period

L.1 Leo Dickson & Son's, Inc.; dated December 28, 1997
L.2-L.7 Malcolm Pirnie, Inc.; dated January 5, 1998 and February 4, 1998

I. Questions/Comments raised during the public meeting:

A. Issues Regarding the Overall Remedy

A.1: You are locking the door after the horse has left the barn. Anything in the dump has already left. It is ridiculous to spend $6 million to clean up a site that cost less than half a million dollars to run it when it was operating. I objected to the operation of this landfill from the time it started. At that time, DEC and the local authorities assured us there would be no problem from the dump. My duck marsh is now a dead area.

Response: The Department maintains that this remedy is necessary for the protection of human health and the environment. The upper terrace of the landfill contains significant amounts of chlorinated solvents. This source area is contributing largely to the contaminated groundwater that is seen leaving the site and entering the adjacent stream. Left untreated and uncontrolled, the site poses the threat of future releases of contamination that may impact residential wells or water quality further downstream.

Regarding the operating history of the landfill, requirements in place at the time the landfill was in operation were less rigorous than the regulations currently in place. Before the 1980s, society was not adequately aware of the threats posed by hazardous wastes. We have learned much since then, including methods to dispose of wastes properly that were once commonly dumped anywhere.

The actual cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually occurs, the final cost of the remedy will more likely be between $2,750,000 and $4,000,000, possibly lower.

A.2: My recommendation is to leave the Urbana Landfill alone. There are natural organisms in soil that will eat the contaminants up.

Response: While microorganisms commonly do degrade contaminants naturally, there are very narrow conditions under which it generally occurs. In the specific case of the Urbana Landfill, biodegradation does appear to be occurring in the groundwater, but at very slow rates. Given the amount of contamination present in the upper terrace of the landfill, natural biodegradation would take at least several decades to substantially improve the site conditions. An enhanced bioremediation system was analyzed in the Feasibility Study, but was discarded because of the time, complexity, and cost associated with engineering a biological system. The soil vapor extraction system will provide the same benefits in a much shorter time frame, using a simpler system, at a comparable cost.

A.3: Is there going to be a leachate collection system installed in the landfill? Do you think the soil vapor extraction system will decrease the contaminant levels in the leachate so the leachate won't meet the definition of hazardous waste?

Response: There are no plans to include a leachate collection system in the remedy. The majority of hazardous wastes are above the water table in the upper terrace. Any hazardous wastes appearing in the groundwater are leaching from contaminated soils in the landfill. By cleaning up these soils and capping the landfill, the amount of contamination in the groundwater will diminish over time. Since the groundwater quality should improve after the hot spot remediation, there will be no need to actively collect and treat the leachate.

A.4: Will the cleanup work be done by contractors with supervision from the state?

Response: Yes; whether constructed by PRPs or the state, the Department will oversee the actual construction of the remedy.

A.5: How soon will the cleanup be completed?

Response: Before any Superfund money can be spent, the Department will approach the Potentially Responsible Parties (PRPs) to see if they are willing to undertake the remediation. If no PRPs agree, the work would be performed under the state Superfund. From there, the design phase should take approximately nine months to a year to complete. After that, the construction contract will be put out for bids. Once the bids are received, construction timing will be controlled by the seasons. At the earliest, construction could start in 12 to 18 months.

A.6: After the remediation is completed, who will do the long-term monitoring? What state agencies will be involved?

Response: If no PRPs agree to conduct the long-term operations and maintenance (O&M), then the Department will oversee the O&M.

A.7: Why don't you move the landfill out if you're going to be digging some of it out anyway?

Response: The costs of excavating the entire landfill would be prohibitive. Further, once excavated, the wastes would then have to be hauled to and buried again at some other landfill. Constructing a cap over the wastes in place is a much more feasible solution.

A.8: In the future, could the site be used for grazing? Could it be used for anything?

Response: The site will be suitable for many passive uses. Other landfills have been used for parks and other recreational uses. Any type of activity that would potentially penetrate the cap or place heavy loads on the cap would not be allowable. Prohibited uses might include: buildings, significant regrading/contouring, etc.

A.9: How many acres at this site will be remediated?

Response: Currently, the wastes cover an area of 12 to 15 acres. These would be consolidated under an approximately 10-acre cap.

B. Issues Regarding the Landfill Cap

B.1: Are you capping with top soil?

Response: State regulations (6 NYCRR 360) are very specific about how a landfill cap is to be constructed. According to these regulations, at least 6 inches of topsoil are required on the surface.

B.2: There is quite a slope at this site; will vegetative cover ensure against erosion?

Response: Again, the Part 360 regulations are very specific about maximum and minimum slopes for a landfill cap. The steep slope at this site has been considered and is the primary reason why waste material will likely need to be excavated and redistributed. Once the final slope is established, vegetative cover will protect the slope against erosion.

B.3: Who will maintain the cover?

Response: Please see the response to question A.6.

C. Issues Regarding Financing of the Remedy

C.1: Is the state going to pay for this cleanup?

Response: As mentioned in the response to question A.5, the next step will be for the Department to negotiate the design and construction of the remedy with the PRPs. In the event that the PRPs are unwilling or unable to pay for the construction, the state will finance construction using Superfund money.

C.2: Why aren't the industries that put stuff in the dump paying for the cleanup?

Response: Please see the response to question C.1.

C.3: Weren't the Town of Urbana and the Village of Hammondsport named as Potentially Responsible Parties? According to the newspaper, the County has to pick up part of the cost of the Old Bath Landfill cleanup. That's ridiculous.

Response: Since they deposited wastes at the landfill, the municipalities are considered PRPs until more information can be obtained. The Department is specifically interested in pursuing entities that have deposited hazardous wastes in the landfill, as well as the owners and operators of the landfill. These issues will be further resolved by the Department's legal staff during the upcoming PRP negotiations.

C.4: If the people who put the waste there don't pay for the cleanup, what will the local government have to pay up front?

Response: These issues will be further resolved by the Department's legal staff during the upcoming PRP negotiations.

C.5: If it is accurate to say that it will be a year to 18 months before the cleanup is put out to bid, will there be Superfund money available at that time to pay for the cleanup?

Response: While the Superfund account is nearing the end of its funding, current projections estimate the fund to be depleted in 2001. Availability of Superfund money is not certain, but likely.

C.6: Across the state, what percentage of site cleanups have been paid for by the responsible companies? Was this percentage paid before or after the Bond Act was passed?

Response: To date, responsible parties are funding cleanup at approximately 70% of New York's hazardous waste sites. In terms of costs, responsible parties have contributed approximately 66% of the total funds committed to hazardous waste site remediation in New York to date. The remaining funding has been paid by the state and federal governments.

C.7: How many companies moved out of New York State after paying the 70% of cleanup costs? This company can't afford $6 million.

Response: The Department has no information indicating a connection between costs to clean up inactive hazardous waste sites and companies deciding to leave the state. Regarding the cost of the remedy, the actual cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually occurs, the final cost of the remedy will more likely be between $2,750,000 and $4,000,000, possibly lower.

D. Issues of a General Nature

D.1: Back in the 1970's when the contaminants were put into the ground, were there laws against this practice? Was it legal at that time to dump?

Response: The environmental laws governing hazardous wastes and waste disposal have evolved over the last twenty years. Most of the current regulations against hazardous waste disposal only began in the late 1970s and early 1980s.

D.2: This is my land, but if I'm going to lose all uses of the land, who's going to pay taxes on it?

Response: The Department has no authority to change property taxes or valuations. Issues of that nature must be addressed by the local governments.

D.3: How are Superfund sites chosen?

Response: There are a number of mechanisms by which sites are brought to the Department's attention. These include voluntary disclosure of waste disposal by the responsible parties, citizen complaints, and contaminated public water supplies, among others. Once a site is brought to the Department's attention, preliminary investigations are conducted to determine if the site actually poses a threat to public health and/or the environment. If so, then the site is referred for a Remedial Investigation and Feasibility Study (RI/FS) to select an appropriate remedy.

D.4: How can you tell a company they are responsible for the cleanup when it was legal for them to dump in the 1970s?

Response: The laws enabling Superfund provide for retroactive liability. Even though an activity may have been legal, the responsible parties are still responsible and liable under the law for their past actions. Whether this policy should continue has been the focus of national debate over the past several years.

D.5: Why has it taken since 1980 to get this far?

Response: Several factors combine that result in long periods being necessary to remediate sites. New York State was faced with a daunting task in the 1980s of compiling all the information about where wastes

were disposed and finding those sites. Since the number of sites exceeded the resources available for investigations and clean ups, the sites had to be prioritized. To responsibly manage limited resources, sites are generally handled on a "worst first" basis. Other factors including technical and legal complexities contribute to the long times involved.

D.6: We've been hearing about children getting cancer in the Rochester area. There is a lot of cancer in this area too. Is the Department of Health looking into that?

Response: The NYSDOH Cancer Registry publication, *Cancer Incidence and Mortality by County, 1983-1993*, provides average age-adjusted cancer incidence and mortality rates per 100,000 population for each New York State county. According to this publication, rates for Steuben County are generally comparable to rates for Upstate New York (excluding New York City).

Unfortunately, cancer is a very common disease. One in two men and one in three women will be diagnosed with cancer at some time during their life. Three of four families will have a member diagnosed with cancer. Cancer is not a disease, but a group of diseases. There are more than 100 different types of cancer, each with different risk factors. Cancers develop in people of all ages, but most often in the middle-aged and elderly. The number of cancer cases has risen dramatically over the past 40 years, but much of this increase is a reflection of the increase in the population, particularly in older age groups. Cancer of the prostate, lung, and colon cancer are the most common types diagnosed among adult males. Breast, lung, and colon cancer are the most common among adult females.

The public meeting for the Urbana Landfill PRAP was the first time the issue concerning a perceived increase of cancer rates for the area was raised. Further investigation into cancer incidence in the area is not planned. If any additional information is required concerning cancer prevalence, please feel free to contact Ms. Mary Chris Schultz of the NYSDOH at 1-800-458-1158, extension 6212.

II. Letters Received During the Comment Period

The following letters were received during the public comment period. This section includes either a summary of the comments received in the letter or the actual comment followed by the Department's responses.

Comment L.1 is from a letter dated December 28, 1997 from Leo Dickson & Son's Inc. Of Bath, NY:

L.1: I would definitely recommend, as opposed to the air system discussed, to put in a leachate collection system around the perimeter of the landfill along with the cover. This, compared to the O&M cost and installation of the air system along with the questionable long term success or possible failure of this system, might warrant the construction of the collection system. Without a collection system of the leachate, the result would be an adverse condition to the water quality of Keuka Lake.

Response: The Department believes that a leachate collection system is not necessary at this time. The amount of contaminated groundwater that is leaving the site is relatively small and can be adequately addressed by removing the hazardous wastes and reducing the infiltration of precipitation. A leachate collection system, without any source remediation, would require O&M for possibly many decades to ensure that contaminated groundwater does not leave the site boundary. The Department believes that the same goal can be accomplished by removing the source materials through the vapor extraction system in less than two years.

Comments L.2 - L.7 are summarized from letters dated January 5, 1998 and February 4, 1998 from Malcolm Pirnie, Inc., representing Mercury Aircraft:

L.2: Malcolm Pirnie comments that the Department has not adequately justified the need for consolidating the waste materials along the stream bank and property boundaries. Since the Part 360 regulations apply specifically to new landfills, not inactive ones, this site is not bound by the regulations. They add that the risk of relocating the wastes is much greater than leaving them in place.

Response: Part 360 does, in fact, apply to inactive landfills (6 NYCRR 360-1.7(a)(3)(viii)(c) references inactive facilities). The regulation states that at a minimum, inactive landfills must be closed according to older technical specifications. In addition, 6 NYCRR 375 has a provision for Standards, Criteria, and Guidelines (SCGs) that hazardous waste remediations are to comply with. The regulation essentially states that if comparable regulations exist that govern a site-specific condition, those regulations must be followed or good reasons for a waiver must be given. The SCGs requirement assures that remedial measures comply with the same requirements as any other facility. For example, if a remedy were to involve an air emission of hazardous substances, then that emission source would have to meet the same permit requirements as a private facility. The Part 360 landfill cap regulations, as well as the Part 373 landfill regulations, are relevant and appropriate for this cap.

The Department maintains that consolidation of some of the wastes, especially along the stream bank, is both desirable and necessary. To leave waste materials in place on the stream bank poses several problems. First, the western slope of the landfill adjacent to the stream is too steep and must be regraded or significantly stabilized in order to construct a cap. By leaving the slope as it is, there is a high risk that the cap will not stay in place and would slough off into the stream, re-exposing the wastes and possibly carrying the wastes into the stream. Second, there is a large amount of waste that is disposed right up to the stream itself. Any heavy rain or flood could easily carry some of this waste into the stream. Third, if the wastes directly bordering the stream are capped in place, there would be a high risk of the stream undermining the cap, causing it to fail and resulting in wastes entering the stream. Failure to comply with the substantive requirements of the Part 360 regulations could create a cap that is unstable, prone to failure, and ultimately unprotective of human health and the environment.

Malcolm Pirnie has expressed its opinion that slope stabilization measures can reliably protect the wastes on the western slope without the need for regrading and consolidating these wastes. If this can be demonstrated to be as protective (especially in the long-term) as consolidation, the Department is willing to consider such measures instead of extensive consolidation and regrading.

L.3: Malcolm Pirnie comments that the need for a new landfill cover system to control groundwater migration is not justified. They believe that a Part 360 cover system will only moderately reduce infiltration through the landfill compared to the existing cover. They argue that since the Part 360 regulations do include variances when "equivalent performance" can be demonstrated, the existing cover should meet the variance requirements. They further question the general decision to comply with Part 360 regulations and argue that the decision was not risk-based, nor is it cost-effective.

Response: As previously mentioned in the response to comment L.2, Part 375 requires the Department to implement remedies compatible with existing standards and regulations. It is also Department policy to cap landfills where hazardous wastes are known to have been deposited and these wastes are known to be impacting, or threaten to impact, the environment. When considering these two items together, constructing a Part 360 landfill cover is an appropriate remedial alternative. While the regulations do not provide for a risk-based justification when implementing SCGs, implementing a Part 360 cap would, in fact, be more protective than the existing cover.

Malcolm Pirnie is correct to state that the Part 360 regulations allow for variances to the final cover system. As mentioned in the ROD, the Department is willing to consider modifications to the cover system that will still meet minimum performance standards. While the existing cover may have very low permeability, it is not adequately protected from weathering and erosion. Enhancement of the existing cover to meet acceptable standards will be further evaluated during design.

L.4: Malcolm Pirnie comments that the Department has not justified the need for a new landfill cover system for gas control. They believe that the modeling conducted during the RI/FS does not justify either constructing a landfill cover or remediating Hot Spot #5 to control landfill gases.

Response: The Department has chosen a Part 360 cover system for a number of reasons. The modeling of landfill gasses is not one of the primary reasons a Part 360 cover was chosen. As previously mentioned in the response to comments L.2 and L.3, Regulations and Department policy dictate that a landfill contaminated with hazardous wastes be closed in accordance with Part 360 regulations. In addition to these requirements, site conditions support the decision for a landfill cover system. While Malcolm Pirnie disagrees with the results of the landfill gas modeling, the dispute is largely irrelevant. Off-site groundwater and surface water conditions indicate the site is impacting the environment. As the primary source of the off-site groundwater contamination, Hot Spot #5 should be remediated for reasons other than air releases.

L.5: Malcolm Pirnie comments that the Department has not justified the cost of landfill gas control. If the SVE treatment is successful, comprehensive landfill gas treatment will not be necessary.

Response: The Department does not intend to install active landfill gas collection and treatment systems. The costs for landfill gas control and treatment as presented in the FS represent what would be required if the landfill were to be capped only, with no SVE system in Hot Spot 5. In this case, computer modeling suggests that the landfill gas might contain dangerous levels of hazardous compounds. Some type of gas treatment would be necessary to remove that threat.

Malcolm Pirnie is correct to indicate that since the SVE system will remove a large amount of the contamination, the landfill gas should not need to be separately collected and treated. After deducting the costs for landfill gas collection and treatment from the estimate in the FS the total cost of the remedy is reduced by $300,000 to $5,880,000. Additionally, the actual cost of the remedy is very sensitive to the amount of waste consolidation that will occur and any variances to the standard Part 360 cover that will be realized. Depending on the extent of consolidation that actually occurs, the final cost of the remedy will more likely be between $2,750,000 and $4,000,000, possibly lower. The values in the ROD have been changed to reflect this.

L.6: Malcolm Pirnie comments that the Department has not justified the need to remediate Hot Spot #5. They believe the air modeling conducted during the RI/FS is unreliable and is overestimating the effectiveness of the SVE system.

Response: As discussed in response L.4, the Department maintains that remediating Hot Spot #5 is both appropriate and beneficial. This hot spot was chosen for remediation for a number of reasons. First, it is the largest hot spot detected at the site. Second, it is the most significant source of chlorinated solvents detected at the site. Since these are the only compounds detected in the off-site groundwater and adjacent stream, remediating this hot spot should help to clean up the off-site problems. Third, it is the Department's policy to remediate any significant, definable source area that can be easily addressed. This is consistent with the preference for permanence and irreversibility as outlined in 6 NYCRR 375-1.10 and the National Contingency Plan (NCP).

Malcolm Pirnie should note that several other hot spots at the site were not selected for remediation, based on the same criteria used for hot spot #5. These other areas were largely not conducive to remediation because they were located among the municipal refuse in the landfill, were generally located beneath the water table, comprised relatively smaller areas, and did not contain compounds that have been detected off-site.

L.7: Malcolm Pirnie believes the Department has not adequately proposed a risk-based justification for a landfill cover system to control gas migration.

Response: As stated in the responses to comments L.2, L.3, and L.4, the Part 360 landfill cover system is an appropriate remedial technology consistent with law, regulations, policy, and site conditions. The selection of the landfill cover is independent of landfill gas considerations. However, the cover system will still be designed to prevent damage from landfill gases (i.e., uplift of the geomembrane).

Administrative Record File Index
Urbana Landfill
Site ID No. 8-51-007
Town of Urbana/Steuben County
ROD Signed: March 1998

Reports

1. **Record of Decision,** prepared by the NYSDEC, dated March 1998.

2. **Proposed Remedial Action Plan,** prepared by the NYSDEC, dated December 1997.

3. **Feasibility Study,** prepared by the Camp, Dresser, and McKee, dated October 1997.

4. **Remedial Investigation Report,** prepared by Camp, Dresser, and McKee, dated March 1997.

5. **Remedial Investigation Phase II Report,** prepared by Camp, Dresser, and McKee, dated August 1997.

6. **Citizen Participation Plan;** prepared by the NYSDEC, dated April 1996.

7. **Work Plan - Remedial Investigation/ Feasibility Study,** prepared by Camp, Dresser, and McKee, dated April 1996.

8. **Phase II Investigation - Urbana Town Dump,** prepared by Recra Research, Inc., dated August 1985.

Fact Sheets

1. Fact Sheet, Proposed Remedial Action Plan, prepared by the NYSDEC, December 1997.

2. Fact Sheet, prepared by the NYSDEC, April 1997.

3. Fact sheet, prepared by the NYSDEC, May 1996.

Correspondence

1. Letter, from G. Anders Carlson, Director, Bureau of Environmental Exposure Investigation, NYSDOH to Michael O'Toole, Director, Div. of Environmental Remediation, Re: Record of Decision for theUrbana Landfill Site, dated March 1998.

2. Letter, from Philip M. Dickson, Leo Dickson & Son's Inc., toJoseph Moloughney, Project Manager, NYSDEC, Re: Comments on the Proposed Remedial Action Plan for theUrbana Landfill, dated December 28, 1997.

3. Letters, from Anne Marie McManus, Malcolm Pirnie, to Joseph Moloughney, Project Manager, NYSDEC, Re: NYSDEC, Proposed Remedial Action Plan, Urbana Landfill, dated January 5, 1998 and February 4, 1998.

4. Letter, from G. Anders Carlson, Director, Bureau of Environmental Exposure Investigation, NYSDOH to Michael O'Toole, Director, Div. of Environmental Remediation, Re: Proposed Remedial Action Plan for the

Urbana Landfill Site, dated December 19, 1997.

5. Letter, from Michael O'Toole, Director, DHWR to Michael Memoli, Camp, Dresser and McKee, Inc., Re: State Superfund Work Plan Approval, dated May 28, 1996.

6. Letter, from Raymond Lupe, Chief Contract Development Section, DHWR to Michael Memoli, Camp, Dresser and McKee, Inc., Re: State Superfund Standby Contract, dated October 26, 1995.

7. Memorandum, from Charles Sullivan to Michael O'Toole, Re: Referral - Urbana Landfill Site, dated March 16, 1995.

8. Registry Listing Document, "Addition/Changes to Registry of Inactive Hazardous Wastes Disposal Sites", Urbana Landfill, prepared by the NYSDEC, dated March 1993.

9. Hazardous Waste Disposal Questionnaire, Completed by Sam D'Angelo of Mercury Aircraft, Dated April 16, 1984.