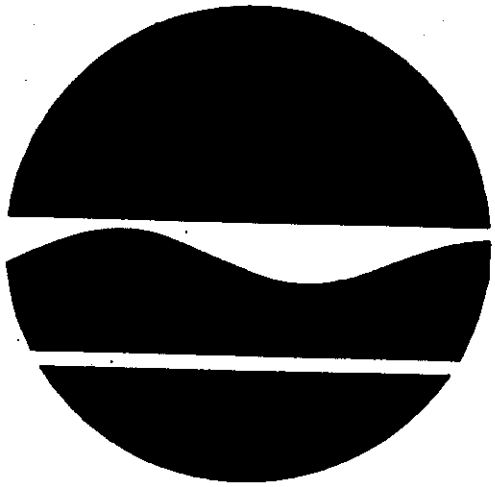
Route 8 Landfill Site

Village of Sidney, Delaware County
Site Number 413009

Record of Decision



February 1992

Prepared by:

NEW YORK STATE

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Region 4, 2176 Guilderland Avenue, Schenectady, N Y 12306

THOMAS C. JORLING, Commissioner

Declaration for the Record of Decision

Site Name and Location

Route 8 Landfill, Village of Sidney, Delaware County, New York, Site ID #413009

Statement of Basis and Purpose

This decision document presents the selected remedial action for the Rt. 8 Landfill, developed in accordance with the New York State Environmental Conservation Law (ECL), and is consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USL Section 9601, et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Appendix A of this record lists the documents that comprise the Administrative Record for the Rt. 8 Landfill. The documents in the Administrative Record are the basis for the selected remedial action.

Assessment of the Site

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision, present a current or potential threat to public health, welfare, or the environment.

The contamination at the site is volatile organic compounds in the over burden and bedrock aquifers, plus very low level PCB contamination in sediment at the Gifford Road Spring and marsh area.

Description of the Selected Remedy

The selected remedy for this site consists of:

1. Landfill Area - No further action would be taken at the landfill. The deed restrictions will remain in place and a Village of Sidney ban on any potable water well drilling in the area shall continue.

2. Covering of Contaminated Surface Soils, Interceptor Trench with Groundwater Treatment - In the area south of the Gifford Road Spring, a shallow interceptor trench, approximately 100 ft. long and 10 ft. deep will be installed. This trench would be dewatered on a continuous basis and the collected groundwater treated. This treatment system would use iron precipitation, chemical oxidation and granular activated carbon or other equally effective treatment. Treated water would then be discharged to the

existing drainageway on the south side of Delaware Avenue. Following start-up of trench dewatering and after the surface discharges ceased, the sediments at the Gifford Road Spring and the Marsh area would be covered with approximately 1430 cubic yards of rip rap.

3. Bedrock Aquifer Recovery and Treatment - An additional bedrock aquifer well would be installed as close to the source as possible. The Unalam well and the new well would be pumped at a combined rate sufficient to contain the contaminant plume in the bedrock aquifer. Groundwater recovered from these wells would be treated for VOC contamination by chemical oxidation with GAC or equally effective treatment and then discharged to the Unalam tributary.

4. Groundwater monitoring will be done quarterly. At some point in the future the Department may review sampling history and reduce monitoring frequency if results warrant.

DECLARATION

The selected remedy is designed to be protective of human health and the environment and is designed to comply with applicable State environmental quality standards and is cost effective. This remedy satisfies the Department's preference for treatment that reduces the toxicity, mobility or volume of hazardous substances, pollutants or contaminants as the principal goal.

2-21-92
Date

Edward O. Sullivan
Deputy Commissioner
Office of Environmental Remediation

TABLE OF CONTENTS

ATTACHMENTS

SITE BACKGROUND

I. LOCATION

The Amphenol Route 8 Landfill Site is located in the Village of Sidney, Delaware County, New York, southwest of the intersection of New York State Route 8 and Delaware Avenue (formerly Gifford Road). The landfill was used during the 1960s by Bendix Corporation (now Amphenol) for disposal and burning of solid and liquid wastes from its electrical components manufacturing facility. Investigations have concluded that the landfill consisted of three primary disposal areas; a large area for solid refuse, and two smaller areas for waste liquids. (See Appendix B)

This site is very unusual because in the early 1970s the New York State Department of Transportation built Route 8 directly over the landfill thereby encapsulating major portions of the landfill under the four lane highway. (See Appendix B)

II. SITE UTILIZATION AND HISTORY

The Bendix plant in Sidney manufactured electrical components during the time that the Route 8 Landfill was in use. The landfill was used primarily for disposal of industrial refuse. At that time the primary waste oil/solvent disposal facility was the Hill Site, located southeast of the landfill. However, some waste oils were disposed of and the experimental solvent burner was tested in the Route 8 landfill area. The principal wastes disposed of here was plant refuse, including waste connector parts and trash, waste oils, and waste solvents. Some of the waste oils may have been hydraulic and transformer fluids which contained polychlorinated biphenyls (PCBs). The solvents were used to degrease electrical components prior to electroplating; the principal solvent in use was trichloroethene (TCE). However, some other solvents such as 1,1,1-trichloroethane (TCA) may also have been used in smaller quantities.

In 1981, Allied Corporation acquired the Bendix Electrical Components Division plant in Sidney. According to the updated chronology of waste disposal activities at the plant as prepared by Allied-Bendix in 1984, the Route 8 Landfill was in use around the early 1960s. After closure of the nearby Hill Site disposal area in 1964, it appears that some waste oils and solvents may have been disposed in the Route 8 Landfill area. An experimental oil/solvent burning unit is believed to have operated adjacent to the landfill. The exact year in which the landfill was closed is unknown, however, it appears to have been in the mid to late

1960s. In December 1983, Allied-Bendix collected water samples from the Gifford Road Spring for volatile organic compound analysis. The results from these samples indicated the presence of volatile organic compounds (VOCs, e.g. trichloroethene, tetrachloroethene, vinyl chloride) in concentrations above state standards. Additionally, the presence of PCBs was detected in sediment samples in nearby seeps. Allied-Bendix reported the existence of the former Route 8 Landfill to the USEPA and the New York State Department of Environmental Conservation (DEC) in transmittals dated 17 Feb 1984.

III. REMEDIAL PROGRAM AND ENFORCEMENT HISTORY

The following is a brief chronology of investigative and remedial activity.

1984 - Amphenol reports the existence of the Route 8 Landfill

1988 - Remedial Investigation submitted to the NYSDEC

1989 - Amphenol Corporation signs Order on Consent

1991 - Feasibility Study submitted to the NYSDEC

During the RI/FS process, sites requiring remediation go through an intensive examination to define the nature and extent of contamination and collect data necessary to evaluate alternatives for remediating the site. The result is the selection of the most appropriate remedial action which will protect the environment and human health from contaminants at the site.

Throughout this process, DEC keeps the local public informed about work under way at the site and of factors leading to the remedial action decision.

IV. REMEDIAL INVESTIGATION FINDINGS

The Route 8 Landfill is a large and complex site that involves the contamination of an overburden and bedrock aquifer, surface water, soil and sediment. The following is a succinct overview of the contamination levels in the most accessible areas of the Route 8 Landfill.

The source of the contamination is two small areas in the landfill where liquids were disposed. As would be expected, levels of PCBs in the soil in this area are significantly above 50 ppm (parts per million) which defines it as a hazardous waste and VOCs exceed 10 ppm. The RI report summarizes specific data

from each particular location. As the investigation moved away from the area where the material had been disposed, the contaminant levels in the soil decreased. There is a distinct groundwater plume that has moved from the site in the overburden and bedrock aquifers (See Appendix B). The contamination is heaviest near the source, 50,000 ppb VOCs in the overburden and 25,000 ppb VOCs in the bedrock aquifer and decreases toward the north. These levels of contamination are significantly above groundwater standards of 50 ppb total VOCs and is one of the primary concerns in remediation of the site.

Gifford Road Spring - Where groundwater in the overburden breaks out at the Gifford Road spring, contaminant levels average about 135 ppb, but have been analyzed as high as 299 ppb VOCs. Low levels of PCBs have also been found in the spring with 4.2 ppb PCBs the highest concentration measured. Sediment at the spring contains 833 ppb PCBs.

Marsh Area - Surface water contaminant levels in the Marsh area are similar to those found in the Gifford Road Spring. Sediments in the Marsh area average about 1.4 ppm PCBs and .01 ppm VOCs. As would be expected the areas around the defined drainage ways have the highest levels of PCB contamination in sediments (6.7 ppb PCB).

Unalam Well - The Unalam Well taps the bedrock aquifer and has drawn the contaminant plume toward it. Contamination of VOCs average around 2000 ppb in the well.

Unalam Tributary - Since the Unalam Tributary receives the discharged cooling water drawn from the Unalam well, low level VOC contamination has been found here.

In addition to establishing the nature and extent of contamination, the remedial investigation arrived at several other conclusions.

By measuring water levels in overburden wells south of Gifford Road while the Unalam Well was pumping, it was established that there is a hydraulic connection between the overburden aquifer and the bedrock aquifer. The significance of this is that a bedrock recovery, pump and treat system can be used to help remediate the overburden system. The addition of another bedrock well in an area of high contamination will increase the effectiveness of groundwater capture and speed the recovery of contaminants from the ground water.

There has been some contamination found in the Unalam Tributary. This contamination is the result of discharge of cooling water from the Unalam Well, a bedrock well having VOC contamination.

Even though there is VOC contamination in both the bedrock and overburden aquifers, the sampling has shown that there are no PCBs in the bedrock aquifer. The PCBs have migrated within a sand lens in the overburden aquifer and have accumulated in this sand lens where the lens is the thickest. This contamination manifests itself at the Gifford Road Spring as surface water PCB contamination.

V. RISK ASSESSMENT

A risk assessment was conducted as a part of the remedial investigation. The risk assessment included identifying indicator contaminants that pose the greatest risk, determining the potential routes of exposure, quantitatively evaluating these potential exposures, assessing the toxicity of the indicator contaminants, characterizing the risk to human health, and finally assessing the environmental risk. The risk assessment determined that there are no significant exposure pathways by which residents in the area could be exposed to contamination from the site via ingestion. Exposure to contaminants via inhalation of fugitive dust is not expected to result in any significant risk. On-site and off-site groundwater contamination exceeds water quality standards and drinking water quality standards. However, there are currently no users of ground water from the two aquifers within the Route 8 Landfill contamination plume, all residences are on public water. Additionally, the Village of Sidney prohibits the installation of new groundwater wells.

It is important to remember that the landfill is covered by Route 8 so there is little chance of direct contact with the waste material either by the public or by wildlife. Furthermore, the roadway and related surface water drainage serves to reduce infiltration of water through the wastes which may result in leaching of contaminants from the wastes into the environment.

VOCs and PCBs are present in the discharges of the Gifford Road Spring; seasonal seeps have VOC levels in the parts per billion range. VOCs volatilize in small quantities from surface water at the Gifford Road Spring and the Unalam tributary discharge. An accumulation of PCBs in the Gifford Road Spring sediments was identified by the NYS Department of Health as needing to be addressed. The concentration of PCBs ranged from 0 to 6.8 ppm which is slightly higher than the 1 ppm cleanup goal for PCB contaminated sediments used at other sites in New York State. Concern for PCB contamination by the NYSDEC Division of Fish and Wildlife is due to the compounds ability to bioaccumulate in organisms, especially predators.

VI. GOALS OF THE REMEDIAL ACTIONS

The NYSDEC goal is containment of the groundwater plumes, reduction of the contamination volume, toxicity and mobility, plus limit the environmental and health impacts.

VII. DESCRIPTION AND EVALUATION OF REMEDIAL ALTERNATIVES

In order to address the need for remediation to the Rt. 8 Landfill, a Feasibility Study was undertaken which reviewed many remedial technologies and ultimately resulted in the formulation and evaluation of five site specific alternative remedial options. All the remedial alternatives except No. 1, the control or no action alternative, offer varying degrees of protection to human health and the environment from the impacts of the Rt 8 Landfill.

Summary of Alternatives

A summary of cost comparisons between the following items is outlined in Appendix C. A description of the work required for each of the alternatives is as follows:

1. No action - Consideration of no action is the baseline for evaluation of other alternatives. It was included in the detailed evaluation in accordance with program requirements. The only action envisioned under this alternative is continued site monitoring, and the continuation of certain institutional controls that are already in place. (e.g. Village of Sidney's ban on new wells)

2. Limited action - The Gifford Road Spring would be fenced off to limit potential exposure to the low level PCBs in the sediments. The very small risk associated with low level exposure via surface water would remain, however, deed restrictions aimed at reducing contact with the contaminants would remain.

3. Deep Ground Water Recovery/Treatment - The bedrock aquifer would be pumped and the water treated for VOC contamination and discharge. Additionally, if the volume from this one well is not sufficient, then one more bedrock well will be installed at a location closer to the source of the contamination in order to contain the contaminant plume. The Gifford Road Spring will have to be fenced and the current institutional controls will continue to be enforced.

4a. Shallow and Deep Ground Water Recovery/Treatment with Covering of Contaminated Surface Soils - The institutional controls already in place would continue to restrict future land

and water use. This alternative will mitigate the risk from bedrock ground water by drilling a bedrock well within a known contaminated area, pumping this well and the Unalam Well together, treating the water and discharging it. Also, a shallow interceptor trench would be installed by the Gifford Road Spring for collection, treatment and ultimate discharge of overburden groundwater. Finally, approximately 1,430 cubic yards of rip rap would be used to cover the Gifford Road Spring and Marsh areas.

4b. Shallow and Deep Ground Water Recovery and Treatment with Removal of Contaminated Surface Soils. - The institutional controls already in place would continue to restrict future land and water use. This alternative would also mitigate the risk from groundwater by containment of the bedrock groundwater plume via pumping and treatment. In addition, this alternative would remove PCB contaminated sediments by dredging of the Marsh Area and the Gifford Road Spring. The installation of a shallow groundwater recovery system would be implemented for collection and treatment of shallow groundwater, potentially mitigating surface water discharges of volatile organics and PCBs.

5. Source Removal and Deep Ground Water Recovery /Treatment - The institutional controls already in place would continue to restrict future land and water use. This alternative would remove portions of the affected site media from the Landfill Source Areas, the glaciofluvial sand unit, and the sediments at the Gifford Road Springs. Water from the Hill Site Drain would also be treated. This alternative also includes ground water recovery and treatment for the bedrock aquifer.

Description of Evaluation of Remedial Alternatives

The alternatives were evaluated with respect to six criteria. Those five criteria are as follows:

1. Overall protection of Human Health and the Environment. The various remedial alternatives were evaluated as to whether they are believed to be able to provide adequate protection of human health and the environment, once the remedial alternative has been completed.

2. Compliance with Clean-up Levels. The various remedial alternatives were evaluated as to whether or not they will be able to achieve the desired clean-up levels.

3. Reduction of Toxicity, Mobility or Volume of Contaminants. The various remedial alternatives were evaluated as to whether or not they will reduce the toxicity (T), mobility (M) or volume (V) at the site.

4. Implementability - The various remedial alternatives were evaluated as to whether they are easy, moderate or difficult to implement. There are various factors which were taken into account when determining implementability. These factors include permit requirements, availability of needed equipment, complexity of remedial systems, and maintenance.

5. Cost - In the cost analysis estimates of expenditures required to complete each measure were developed in terms of both capital and operation and maintenance costs. Once these figures were determined for each alternative, present worth and annual costs were calculated to facilitate comparative evaluation. Cost is an especially critical factor when remedies are comparable in their effectiveness.

6. Safety - The safety of the contractors and the public were evaluated for each of the remedial alternatives.

A comparison of each of the alternatives is summarized in Appendix C, which presents the alternatives and how effectively each addresses the criteria.

VIII. COMPARISONS OF REMEDIAL ALTERNATIVES

A primary goal when developing a remediation strategy for a hazardous waste site is to reduce or remove the contaminants that are the source of the problem. The first alternative, no action, is not further considered as the possible remedy for this site. Although the site is not an immediate health threat, a no action alternative will not reduce its present or future environmental threat.

The second alternative, Limited Action, proposes to fence the Gifford Road Spring in order to prevent exposure to the low level PCBs present in the Spring sediment. This proposal must be eliminated because it does nothing to reduce the mobility, toxicity and volume of the hazardous waste problem. The institutional controls would remain in place preventing any new development or ground water usage.

The third alternative, Deep Ground Water Recovery/Treatment, proposes to fence the Gifford Road Spring, retain all institutional controls and to use the Unalam well to withdraw and treat groundwater. Amphenol also proposes to put in an additional deep well at an location designed to intercept contaminants if the Unalam well is not adequate to contain the contaminant plume. The pumping and treatment of the Unalam Well and an additional deep well would effectively remediate the bedrock aquifer but may not result in compliance with groundwater

and drinking standards. However, continuous pumping of 30-60 gpm would result in removing approximately 1300-2600 lb/yr of VOCs from the bedrock aquifer. This alternative does not address the contamination of the overburden aquifer or the contaminated sediments in the marsh areas.

Alternative Four A, Shallow and Deep Ground Water Recovery/Treatment with Covering of Contaminated Surface Soils, proposes to retain the institutional controls to restrict future land and water uses. This alternative proposes to cover the sediments at the Gifford Road Spring and Marsh areas with approximately 1,430 cubic yards of rip rap. This is to reduce exposure to wildlife as identified in the risk assessment. Additionally, a shallow interceptor trench would be installed by the Gifford Road Spring for collection and treatment of over burden groundwater. Finally, a bedrock well would be drilled within a known contaminated area, as close to the source as possible. This well would be pumped with the Unalam Well, to a treatment system which would treat and discharge the contaminated bedrock water.

The low levels of contamination in the sediment of the Gifford Road Spring and Marsh Area do not warrant excavation. The limited extent, isolation and low contamination levels of these areas allow the negation of any human or animal health threat by covering of the sediment rather than the removal of it.

Alternative Four B, Shallow and Deep Groundwater Recovery/Treatment with Removal of Contaminated Surface Soils, proposes to retain the institutional controls to restrict future land and water uses. This alternative proposes to remove approximately 1400 cubic yards of soils with PCB containment levels between 1 ppm and 5 ppm from the Gifford Road Spring and Marsh Areas and to transport the soil to a secure landfill. Additionally, a shallow interceptor trench would be installed by the Gifford Road Spring for collection and treatment of over burden groundwater. Finally, a bedrock well would be drilled within a known contaminated area. This well would be pumped with the Unalam Well, to a treatment system which would treat and discharge the contaminated bedrock water. This alternative would address all of the impacts of the site similar to 4a except it would remove the sediments contaminated with low levels of PCBs.

The fifth alternative, Source Removal and Deep Ground Water Recovery/Treatment is the most ambitious of the remedial proposals. This proposal intends to keep the institutional controls, remove portions of the Landfill Source Area, the glaciofluvial sand unit, and the sediments at the Gifford Road Spring and marsh area. Water from the Hill Site would also be treated. This proposal is rejected because it is not practical to implement. It is impossible to complete source removal without diverting, if not interrupting traffic on Route 8 during construction. Route 8 is a four lane highway and is the major

north/south route in this area. It also is the connector for Route 88. Further, it is questionable how much source material remained in the landfill after construction of Route 8 was completed.

Due to the location and construction of Route 8, there are no feasible alternatives for treatment or removal of the source of the contamination from the Route 8 Landfill.

IX. SELECTED REMEDIAL ACTION

After completion of the remedial investigation and feasibility study, the Remedial Alternative chosen by the NYSDEC as the most appropriate for implementation is alternative 4a, as described in the RI/FS with some modifications. Following is a summary of what would take place if alternative 4a is chosen.

X. DESCRIPTION AND COST ESTIMATE OF REMEDIAL ACTION

1. Landfill Area - No further action would be taken at the landfill. The deed restrictions will remain in place and a ban on any well drilling in the area shall continue.

2. Covering of Contaminated Surface Soils, Interceptor Trench with Groundwater Treatment - In the area south of the Gifford Road Spring a shallow interceptor trench, approximately 100 ft. long and 10 ft. deep will be installed. This trench would be dewatered on a continuous basis and the collected ground water treated. This treatment system would use iron precipitation, chemical oxidation and granular activated carbon or other equally effective treatment. Treated water would then be discharged to the existing storm drainageway on the south side of Delaware Avenue. Following start-up of trench dewatering and after the surface discharges ceased, the sediments at the Gifford Road Spring and the Marsh area would be covered with approximately 1430 cubic yards of rip rap. These actions would effectively remove risk of direct contact with the low levels of PCBs in the sediment and would adequately protect fish and wildlife.

3. Bedrock Aquifer Recovery and Treatment - An additional bedrock aquifer well would be installed, as close to the source as possible. The Unalam well and the new well would be pumped at a combined rate sufficient to contain the contaminant plume in the bedrock aquifer. Groundwater recovered from these wells would be treated for VOC contamination by chemical oxidation with GAC or equally effective treatment and then discharged to the Unalam tributary. As previously mentioned this deep bedrock remedial alternative would remove 1300 to 2600 lb/yr of VOCs from the bedrock aquifer on a continuous pumping of 30-60

in compliance with all groundwater and drinking standards. However, it would attenuate the migration of VOCs from the site. Future monitoring may indicate how long the system would need to be operated. This well would be located as close as possible to the Rt 8 Landfill in an area of 10,000 - 47,000 ppb of VOCs. The final location would be based on physical access locations and a pump test.

The estimated cost associated with this site-wide alternative is summarized as follows: Capital Cost is $1,152,300; present worth of the operation and maintenance cost over a 30 year period is $2,465,000; making the total present worth cost of $3,617,300.

XI. RATIONALE FOR SELECTION OF REMEDY

The selected remedial action best satisfies the six criteria outlined in Section VII. In addition, the selected remedy meets goals of the remedial action both in the short term and over time.

In the short term, this remedial action immediately prevents further migration of the ground water plumes and inhibits access to sediments in the Gifford Road Spring and marsh area. Construction will not impact activities in the area.

Over the long term, the ground water treatment systems will significantly reduce the amount of contaminants in the landfill area, thereby continuously reducing the health hazard.

XII. PUBLIC PARTICIPATION

As part of the remedial investigation process, a citizen participation plan was developed for the Rt. 8 Landfill. The principle objectives of the Citizen Participation Plan were:

a) Promote public understanding of the Department's responsibilities, planning activities and remedial activities.

b) Provide opportunity for the Department to learn from public information that would facilitate a comprehensive program, protection of both public health and the environment.

The following public participation activities have since been carried out:

A public repository was established at the Sidney Civic Center and the Region 4 Office in Schenectady to contain documents available for public review.

A copy of the Feasibility Study was placed in the public repository.

A public meeting was held on December 19th at 7:30 PM at the Sidney Civic Center to present the draft Record of Decision as a proposed remedial action plan for public review and comment. Comments from the public meeting were discussed and recorded. Additionally, the record remained open until January 17, 1992 for additional written comments. Although no written comments were received, comments raised in the public meeting are summarized in the responsiveness summary attached in the appendices.

XIII. LEGAL STATUS

The remediation of the Route 8 Landfill is being completed under administrative Order on Consent with the Amphenol Corporation. Amphenol has complied with the Consent Order dated October 18, 1988 which outlined the requirements through the remedial investigation, feasibility study and design stage. The remedial program carried out thus far at the Route 8 Landfill and the chosen remedy outlined in this document, comply with Article 27, Title 13 of the New York State Environmental Conservation Law, and with Public Law 96-510 and Compensation and Liability Act of 1980 (CERCLA) and the Superfund Amendments Reauthorization Act of 1986 (SARA), respectively. These laws provide the legal basis for the New York State hazardous site remedial program.

APPENDIX A

List of Documents in the Administrative Record

1. Order on Consent, "In a matter of a Field Investigation to Identify any Threat to the Environment....," October 18, 1988

2. "Draft Citizen Participation Plan, Route 8 Landfill," Department of Environmental Conservation (undated)

3. "Remedial Investigations at the Route 8 Landfill, Volume I" ERM - March 1989

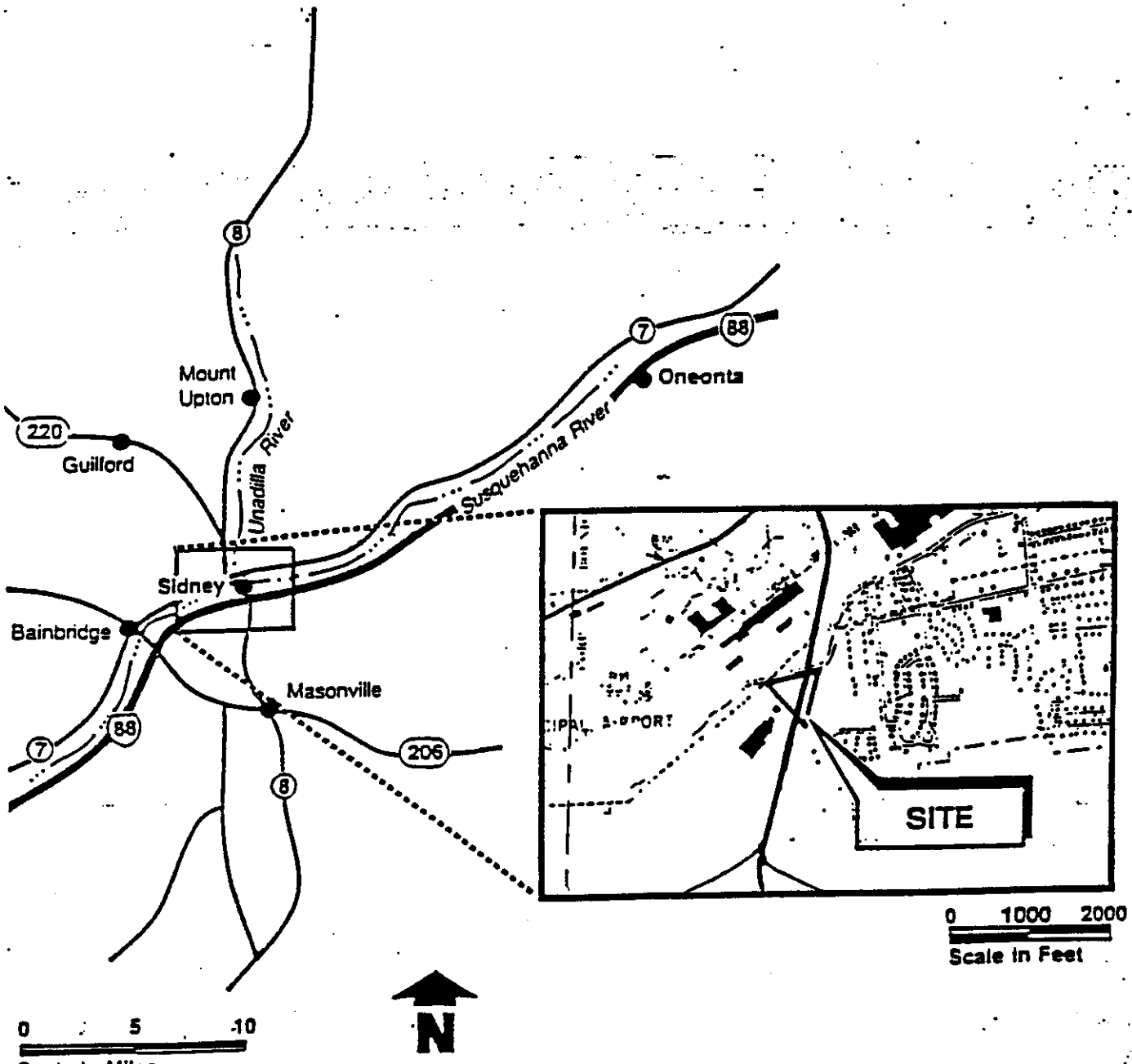
4. "Remedial Investigations at the Route 8 Landfill, Volume II, Appendices" ERM - March 1989

5. "Risk Assessment at the Route 8 Landfill," ERM - March 1989

6. "Habitat Based Assessment of the Route 8 Landfill Site," ERM October 1990

7. "Feasibility Study for the Route 8 Landfill," ERM - April 1991

Site Location Map
Amphenol Route 8 Landfill



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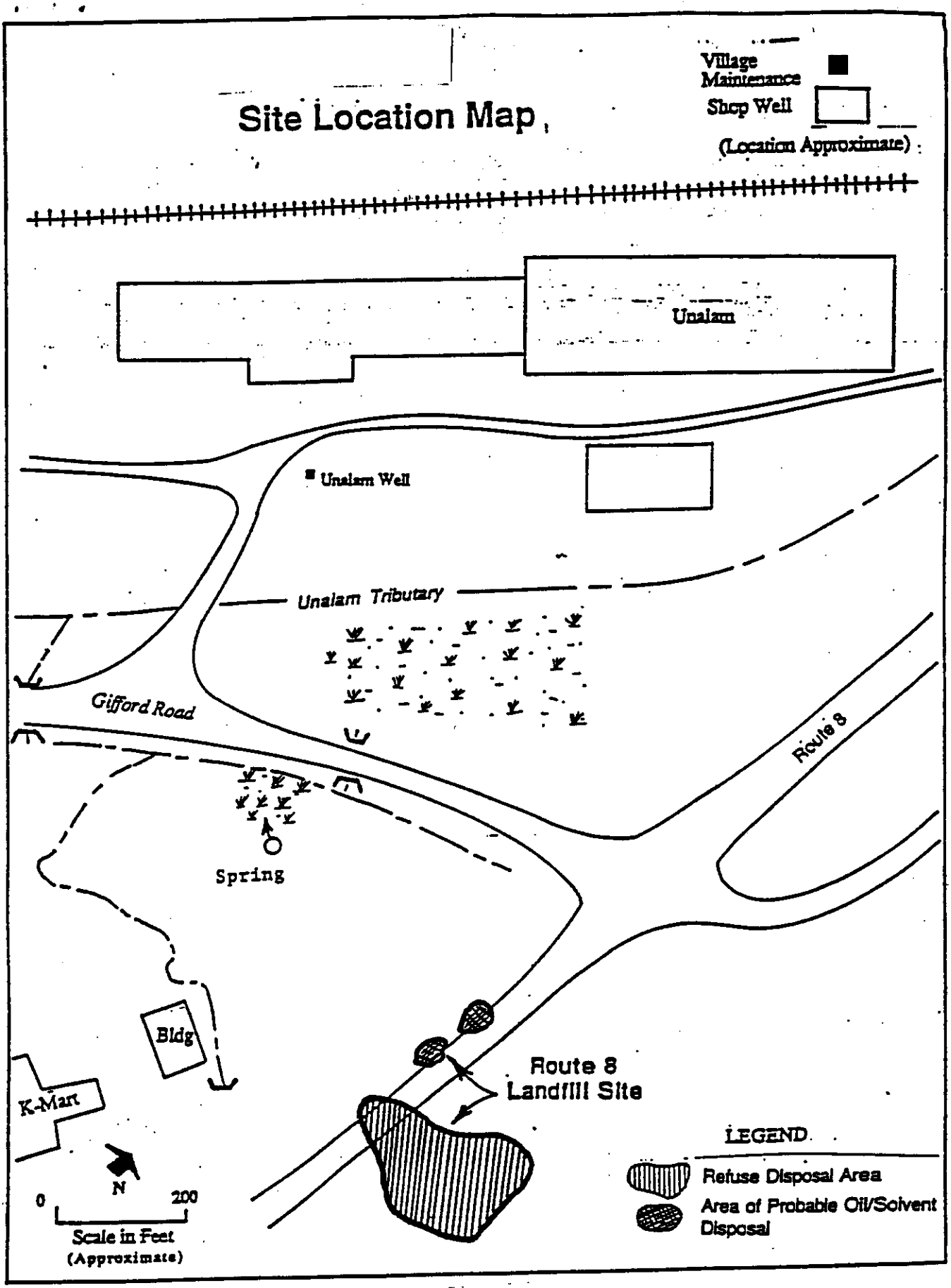
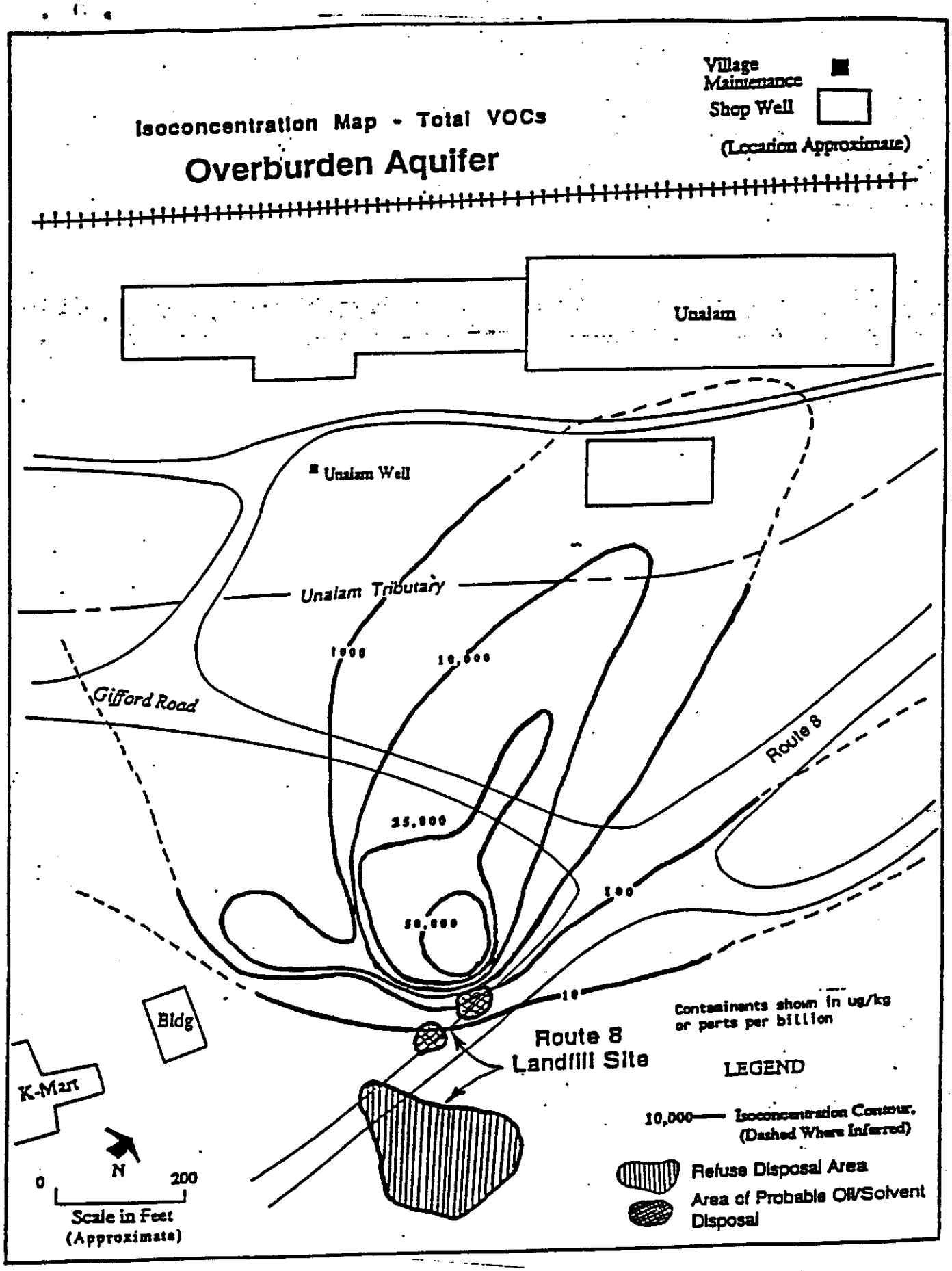
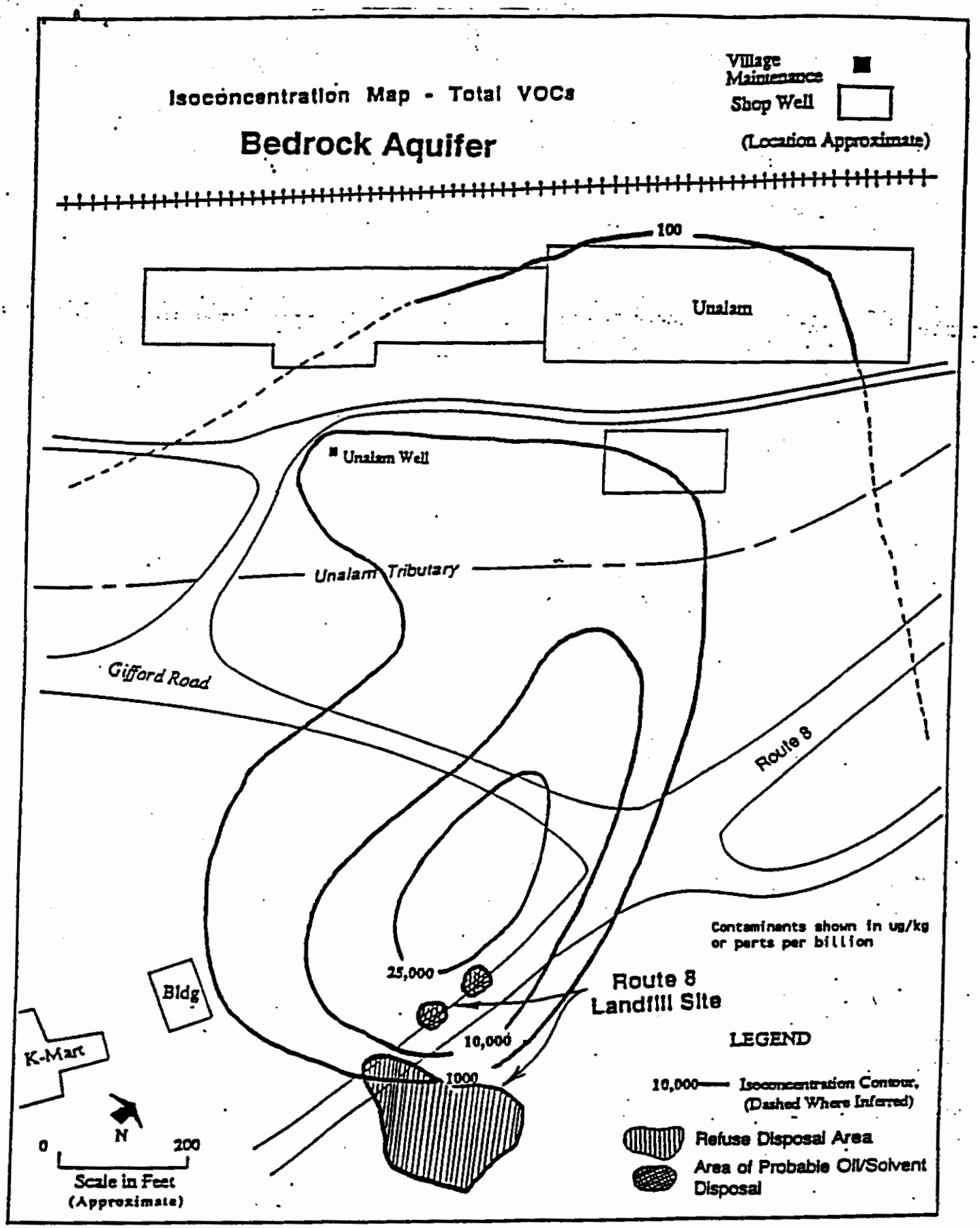
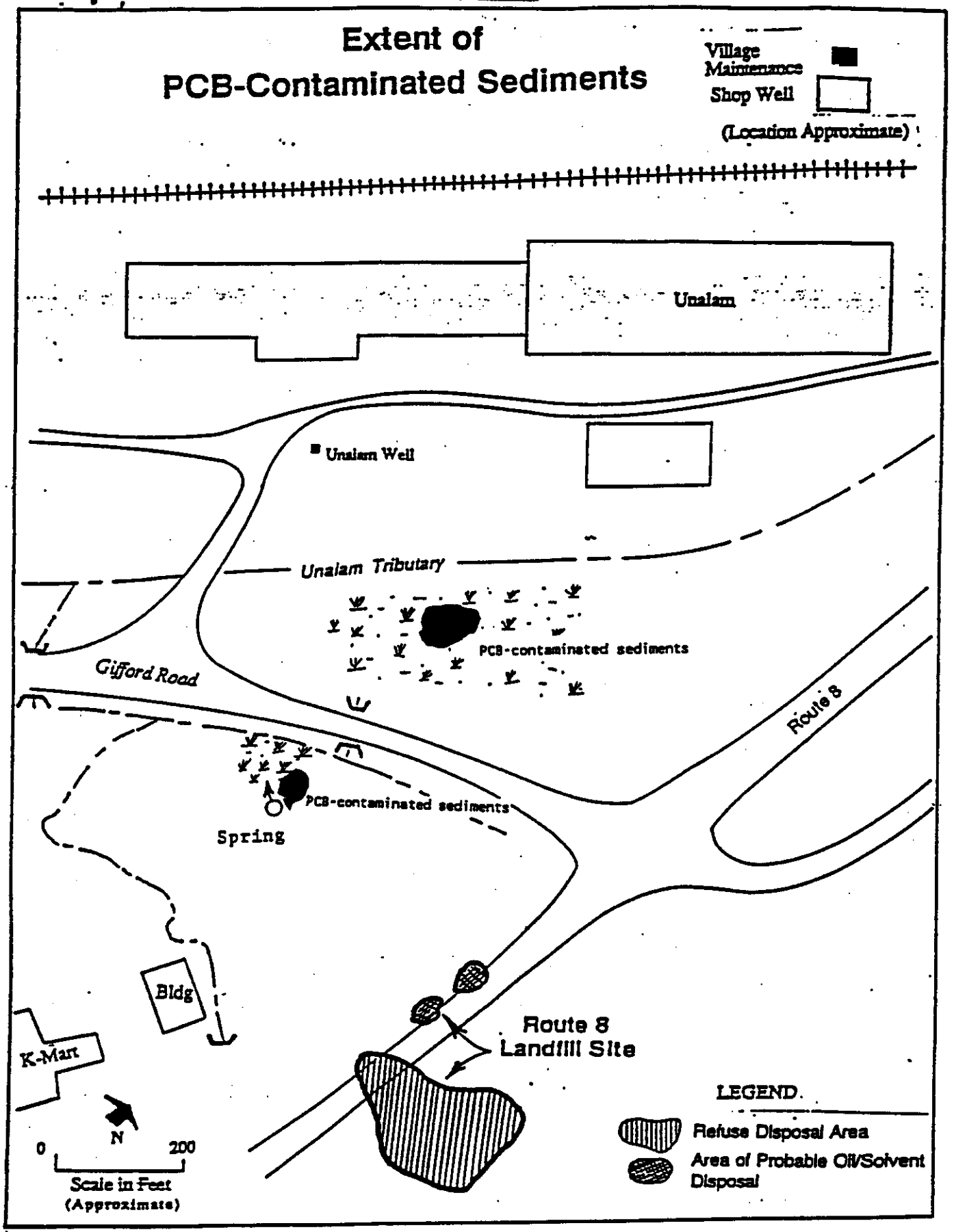

Site Location Map
Village Maintenance Shop Well
(Location Approximate)
Unalam
Unalam Well
Unalam Tributary
Gifford Road
Route 8
Spring
Bldg
K-Mart
Route 8 Landfill Site
N
0
200
Scale in Feet
(Approximate)
LEGEND
Refuse Disposal Area
Area of Probable Oil/Solvent Disposal


Isoconcentration Map - Total VOCs
Overburden Aquifer
Village Maintenance Shop Well
(Location Approximate)
Unalam
Unalam Well
Unalam Tributary
Gifford Road
Route 8
1000
10,000
25,000
50,000
100
10
Bldg
K-Mart
Route 8 Landfill Site
Contaminants shown in ug/kg or parts per billion
LEGEND
10,000 Isoconcentration Contour, (Dashed Where Inferred)
Refuse Disposal Area
Area of Probable Oil/Solvent Disposal
N
0
200
Scale in Feet (Approximate)


Isoconcentration Map - Total VOCs
Bedrock Aquifer
Village Maintenance Shop Well
(Location Approximate)
100
Unalam
Unalam Well
Unalam Tributary
Gifford Road
Route 8
Contaminants shown in ug/kg or parts per billion
25,000
10,000
1000
Route 8 Landfill Site
Bldg
K-Mart
LEGEND
10,000 Isoconcentration Contour, (Dashed Where Inferred)
Refuse Disposal Area
Area of Probable Oil/Solvent Disposal
N
0
200
Scale in Feet
(Approximate)


Extent of
PCB-Contaminated Sediments
Village Maintenance Shop Well
(Location Approximate)
Unalam
Unalam Well
Unalam Tributary
PCB-contaminated sediments
Gifford Road
Route 8
PCB-contaminated sediments
Spring
Bldg
K-Mart
Route 8
Landfill Site
N
0
200
Scale in Feet
(Approximate)
LEGEND
Refuse Disposal Area
Area of Probable Oil/Solvent Disposal

APPENDIX C

Comparison Summary of Costs of the Various Alternatives

1. **NO ACTION**

Capital Cost	$0
30-year Present Worth O&M Cost	$780,000
Total Cost (Capital plus Present Worth O&M)	$780,000

2. **LIMITED ACTION**

Capital Cost	$60,000
30-Year Present Worth O&M Cost	$780,000
Total Cost (Capital plus Present Worth O&M)	$840,000

3. **DEEP GROUND WATER RECOVERY/TREATMENT**

Capital Cost	$570,000
30-year Present Worth O&M Cost	$1,300,000
Total Cost (Capital plus Present Worth O&M)	$1,900,000

4a. **SHALLOW AND DEEP GROUND WATER RECOVERY/TREATMENT WITH COVERING OF CONTAMINATED SURFACE SOILS**

Capital Cost	$1,152,300
30-year Present Worth O&M Cost	$2,465,000
Total Cost (Capital plus Present Worth O&M)	$3,617,300

4b. **SHALLOW AND DEEP GROUND WATER RECOVERY/TREATMENT WITH REMOVAL OF CONTAMINATED SURFACE SOILS**

Capital Cost	$2,700,000
30 Year Present Worth O&M Cost	$2,800,000
Total Cost (Capital plus Present Worth O&M)	$5,500,000

5. **SOURCE REMOVAL AND DEEP GROUND WATER RECOVERY/TREATMENT**

Capital Cost	$50,000,000
30-year Present Worth O&M Cost	1,100,000
Total Cost (Capital plus Present Worth O&M)	$51,000,000

APPENDIX D

Responsiveness Summary

No written comments were received during the public review period.

However, there were questions that were raised at the public meeting. These questions are summarized below:

Q. Have all the original wastes that were deposited in the landfill leached out?

A. Since being built, NYS Route 8 has acted as an impermeable cap over a large portion of the landfill. Route 8 has prevented infiltration of rain water into the landfill, reducing the amount of contaminants moving off-site. However, when the groundwater treatment systems come on line, more of the contaminants will be drawn from the original landfill. This is a desirable reaction because the treatment systems will be removing all contaminants.

Q. What criteria will be used for locating the position of the new bedrock well?

A. The new well will be placed in an area that has as high a level of contamination as possible. The only factors will be access ability by the drill rig and the ability of the new well to use the same bedrock treatment system as the Unalam Well.

Q. During the construction of Route 8 was some contamination from the landfill scattered and spread about?

A. It is possible that this could have happened to some degree. However, during the course of this remedial investigation and work on the adjacent Hill Site, sampling was done on large areas along Route 8 and no surficial contamination was detected.

A full text transcript of the public meeting is available at the two public repositories if more details are needed.

ROUTE 8 LANDFILL

REMEDIAL INVESTIGATION/FEASIBILITY STUDY

Public Meeting

Sidney Civic Center

December 19, 1991
7:30 PM

Name	Address	Representing
R.A. Chamberlin	Hapswell, ME	self
David Pysnik	Sidney, NY	Sidney Cenral School
Jeff Gara	Unadilla, NY	D.Quinney's Govt. Cl.
Jack Figary	Sidney, NY	" " "
Jesse Johnson	Sidney, NY	self
Henry Mitchell	Sidney, NY	Amphenol
Bret Hallenbeck	Sidney, NY	Oneonta Daily Star
Philip Morton	Bainbridge, NY	self
Debra Graham	" "	self
John Woodyshek	Sidney, NY	Village of Sidney
Marjorie Flaesck	"	self
Craig VanCott	Norwich, NY	self
Philip Marasco	Parker Hollow Rd.	self
Elaine Marasco	" " "	self
Scot Lueck	Box 60A	self (SMS)
Anita Wheeler	Sidney, NY	self
Walt Wintsch	2176 Guilderland Ave Schenectady, NY	NYS DEC - Region 4
Eric Hamilton	"	"
Darwin Roosa	"	"
Bob Montione	Albany, NY	NYS Dept. of Health

SUMMARY OF REMEDIAL ALTERNATIVES EVALUATED FOR THE ROUTE 8 LANDFILL REMEDIATION

	Environment & Human Health Protected	Compliance w/cleanup Levels	Reduction of Toxicity Mobility & Volume	Implementability	Cost
1. No Action	N	N	-	easy	$780,000
2. Limited Action	N	N	-	easy	$840,000
3. Deep Groundwater Recovery Treatment	N	N	M,V	moderate	$1.9 million
4a. Shallow & Deep G.W. Recovery & Treatment with covering of Contaminated Surface Soils	Y	Y*	T,M,V	moderate to difficult	$3.6 million
4b. Shallow and Deep G.W. Recovery and Treatment with Removal of Contaminated Surface Soils	Y	Y*	T,M,V	moderate to difficult	$5.5 million
5. Source Removal Deep G.W. Recovery/ Treatment	Y	Y*	T,M,V	difficult	$55 million

* The goal is to restore the quality of the aquifer. This alternative may not result in compliance with all groundwater and drinking water standards, but will attenuate migration of contaminates and will remove significant amounts of VOC's from the groundwater.

CONTAMINATION LEVELS AT THE RTE 8 LANDFILL

	VOC (ppb)					PCB (ppb)				
	Sediment	Soil	Surface Water	Overburden Aquifer	Bedrock Aquifer	Sediment	Soil	Surface Water	Overburden Aquifer	Bedrock Aquifer
Gifford Road Spring	NA	NA	135	NA	NA	833	NA	4.2 (b)	NA	NA
Marsh Area	11	NA	155	NA	NA	1336 (c)	NA	3.4	NA	NA
Unalam Well	NA	NA	NA	NA	2,356	NA	NA	NA	NA	ND
Unalam Tributary	NA	NA	91.5 (b)	NA	NA	ND	NA	NA	NA	NA

(a) Same Test boring TB-5
(b) 1 time hit
NA = Not Analyzed
ND = Not Detected
(c) Considered a Quantitative Estimate

New York State groundwater standards regarding VOCs are: No more than 5 ppb per individual VOC or 50 ppb for more than one.

These levels are averages of multiple sampling rounds.