Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Cauterskill Road Site
Catskill (T), Greene County
Site Number 4-20-024

March 2000

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

DECLARATION STATEMENT - RECORD OF DECISION

Cauterskill Road Inactive Hazardous Waste Site
Catskill (T), Greene County, New York
Site No. 4-20-024

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Cauterskill Road class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Cauterskill Road inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing 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 release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Cauterskill Road Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected the removal of soils contaminated above action levels as the remedy for the site. The components of the remedy are as follows:

- The excavation and off site disposal of contaminated soils which exceed applicable standards, criteria, and guidelines (SCGs). This encompasses those site soils which pose a significant threat to human health associated with direct contact exposures as well as those soils which pose a significant environmental threat associated with potential impacts to groundwater, surface water and sediments. The site will be regraded following excavation. This alternative removes the threat to human health and the environment currently posed by the disposal of hazardous wastes at the site and allows for the unrestricted reuse of the site. However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

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.

3/30/2000

Date

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

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RECORD OF DECISION

Cauterskill Road Site
Catskill, Greene County, New York
Site No. 4-20-024
March 2000

SECTION 1: SUMMARY AND PURPOSE OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the Cauterskill Road Site, a class 2 inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, the disposal of metal plating sludges and other hazardous wastes has resulted in elevated levels of cyanide, chromium, cadmium, copper, nickel and zinc, at the site. Some of these wastes were released or have migrated from the site to surrounding areas, including the intermittent creek which passes through the site. These disposal activities have resulted in the following significant threats to the public health and the environment:

- a significant threat to human health associated with the direct contact with the contaminated soils at the site.

- a significant environmental threat associated with the potential impacts of contaminants to the groundwater and the surface water and sediments of the intermittent creek from site contaminants.

In order to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous wastes disposed at the Cauterskill Road Site have caused, the following remedy was selected:

- The excavation and off site disposal of contaminated soils which exceed applicable standards, criteria, and guidelines (SCGs). This encompasses those site soils which pose a significant threat to human health associated with direct contact exposures as well as those soils which pose a significant environmental threat associated with potential impacts to groundwater, surface water and sediments. The site will be regraded following excavation. This alternative removes the threat to human health and the environment currently posed by the disposal of hazardous wastes at the site and allows for the unrestricted reuse of the site. However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

The selected remedy, discussed in detail in Section 7 of this document, is intended to attain the remediation goals selected for this site in Section 6 of this Record of Decision (ROD), in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

The Cauterskill Road Site (site # 4-20-024) is a private residence located at 5040 and 5048 Cauterskill Road in the Town of Catskill, Greene County, NY. It is located on the east side of Cauterskill Road north of State Route 23A, approximately 2 miles southwest of the village of Catskill. The site is in a rural area just east of the northbound lane of the New York State Thruway. Private residences are located immediately to the north of the site and the Town of Catskill Highway Department is located to the south along Cauterskill Road. The lands to the east are undeveloped (See Figure 1). The site is divided into two parcels, waste disposal is believed to have occurred on a 0.5 acre portion of the northern parcel. The parcels are partially wooded with a north/south trending ravine traversing the site. This ravine is approximately 15 feet deep and contains an intermittent tributary to Katterskill Creek. Katterskill Creek is located 0.7 miles north of the site and flows into Catskill Creek which in turn flows into the Hudson River at the Town of Catskill.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The Cauterskill Road Site was the residence of the owner/operator of the Catskill Chrome Plating Company (site # 4-20-023). Wastes from this company were reportedly disposed of at the Cauterskill Road site from the mid 1980's until 1992. These wastes consisted of off-spec plating solutions, untreated plating sludges containing cyanide, chromium, cadmium, copper, nickel and zinc. Tanks of rinse water and acid were also disposed of at the site. Additional materials that were dumped at the site include; asphalt, tires, metal debris, domestic trash, drums, pallets, vats and other miscellaneous debris.

3.2: Remedial History

The New York State Department of Health and the NYSDEC have collected water quality samples from private wells of residences near the Cauterskill Road Site since 1989 and most recently in 1999, for metal and VOC analysis. No site related contaminants were detected above standards. In 1993, soil, surface water, sediment, and waste samples were collected as part of an investigation conducted by the NYSDEC Division of Environmental Enforcement. High levels of several metals and cyanide were detected in site soils. The site was placed on the NYSDEC Registry of Inactive Hazardous Waste Sites as a class 2 site after additional investigations performed in 1997 confirmed the presence of high levels of cyanide, cadmium and chromium in the site soils. The remedial investigation began in December 1998.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to evaluate alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, the NYSDEC has recently conducted a Remedial Investigation/Feasibility Study (RI/FS).

4.1: 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 December 1998 and March 1999 followed by the second phase in June 1999. A report entitled Remedial Investigation Report of the Cauterskill Road Site, Catskill, NY, dated September 1999 has been prepared which describes the field activities and findings of the RI in detail.

The RI included the following activities:

- *Geophysical survey.*
- *Surface soil sampling and analysis.*
- *Waste sample and analysis.*
- *Surface water and sediment sampling and analysis.*
- *Fish and wildlife impact analysis.*
- *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 determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Cauterskill Road Site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. In addition, for soils, site specific background concentration levels can be considered as cleanup objectives for certain classes of contaminants. Guidance values for evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments".

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas 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). For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1: Site Geology and Hydrogeology

The geologic and hydrogeologic conditions encountered at the site are consistent with the regional geology. Bedrock outcrops at several locations at the site providing evidence of folding and faulting. The ravine containing the intermittent creek on the site parallels one of these faults. Depth to bedrock across the site ranges from 0 to 12 feet with the site soils consisting of brown clay and silt or sand and silt with some gravel at most locations. The bedrock at the site is a fractured limestone. Surface drainage and groundwater flow is east towards the creek bed then north along the fault line. The flow in the creek on site is intermittent with the creek bed being dry during most of the investigation. There was flow in the creek and water in the two intermittent ponds during rain events or periods of snow melt. The creek is a losing stream, capable of flow only during recharge events and the fault acts a groundwater sink with a strong downward gradient and ultimately flowing north towards Katterskill Creek.

4.1.2: Nature of Contamination

As described in the RI report, many soil, groundwater, surface water and sediment samples were collected at the site to characterize the nature and extent of contamination. The main category of contaminants which exceeded its SCGs is inorganics (metals). Other categories of contaminants that were detected and exceeded SCGs in various media were semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs). The inorganic contaminants of concern are cadmium, chromium, copper, nickel, lead, zinc and cyanide. These contaminants were detected in surface and subsurface soils, sediments and surface water. No volatile contaminants were detected in any media that exceeded SCGs. The semivolatile contaminants that were detected were phthalates and polycyclic aromatic hydrocarbons (PAHs). These were detected in surface soils, subsurface soils and sediments. Phthalates were detected in surface water and groundwater at low levels. Pesticides were detected in 3 of the 11 test pits with only heptachlor epoxide detected in one sample above SCGs. Heptachlor epoxide was also detected in 2 sediment samples below SCGs. PCBs were detected in low levels in five surface soil samples, one subsurface soil sample and one sediment sample. Only one surface soil sample was above SCGs for PCB.

4.1.3: Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in soils, surface water and sediments, and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

The surface and subsurface soils at the site are contaminated with several organic compounds and metals above SCGs. This contamination is related to the disposal of wastes at the site and occurs

in the vicinity of the on-site buildings, along a dirt access road and adjacent to the bank of the intermittent creek.

Groundwater

The groundwater at the site did not contain site related contaminants above SCGs.

Sediments

The sediments in the intermittent creek on the site contain levels of several semivolatile organic compounds and metals above screening levels. Some of these compounds were detected in both the upstream and downstream sample locations and therefore, may not be site related. However, several of the compounds detected are related to the wastes disposed of at the site. A Toxic Effect Analysis was conducted based on the presence of site related contaminants in the sediments. The results of this analysis determined that no adverse effects were presently measured at the site. Section 6 of the RI provides more detail on this analysis.

Surface Water

One semivolatile compound was detected in both the upstream and downstream samples above screening criteria, four inorganics were detected above NYSDEC Class C water quality standards in both the upstream and downstream samples.

Waste Materials

The waste materials sampled at the site did not exceed the Toxicity Characteristic Leaching Procedure (TCLP) criteria or the cyanide reactivity standards.

4.2: 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.

An exposure pathway is the manner by which an individual may come in 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.

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

- ingestion of the site soil and /or waste media,
- direct contact with the contaminated soils,

- inhalation of airborne dust is a potential secondary source of exposure

4.3: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. The Fish and Wildlife Impact Analysis included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The analysis concluded that potential for environmental exposure and ecological risks exists at the site. Per NYSDEC guidance, a toxic effect analysis was undertaken to evaluate these risks. The findings of the toxic effect analysis concluded that the risks currently appear to be negligible. The results of the sediment toxicity tests demonstrated no adverse effects on the growth and survival of benthic macro invertebrates.

However, due to the high levels of contaminated soils exposed at the site and the potential for further erosion of these soils into the creek, the potential for ecological risk continues to exist.

SECTION 5: 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 for the site, documented to date, include past or present owners and operators.

The PRPs declined 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 6: 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 must eliminate or mitigate all significant threats to public health and/or 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:

- *Eliminate, to the extent practicable, exposures to contaminated site soils.*
- *Eliminate, to the extent practicable, the migration of site related contaminants off site.*

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must 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 Cauterskill Road Site were identified, screened and evaluated in the report entitled Feasibility Study Cauterskill Road Site Catskill, New York (February, 2000).

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to implement 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.

7.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminated soils at the site.

Alternative 1
No Action

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. There would be no costs associated with implementing the no action alternative. The only costs associated with the no action alternative are the costs of monitoring as required by leaving wastes at the site in an unremediated state.

Alternative 2
Covering of Soils Exceeding Cleanup Goals

Present Worth:$ 81,100
Capital Cost:$ 53,800
Annual O&M:$ 1,000
Time to Implement: 6 months - 1 year

This alternative would place a soil cover over all site soils that exceed SCGs. This cover would consist of six inches of soil covered with another six inches of top soil that would then be graded and seeded. The area of the site along the stream bank that is too steep for the placement of the soil cover would be lined with a geofrabric and then have rip rap placed over it to prevent erosion and direct contact.

Because this alternative leaves the contaminated soils on the site, future uses of the site would need to be restricted to be protective of human health and the environment. This would require that an annual operation and maintenance program be established.

However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

Alternative 3
Removal of Group 1 Contaminated Soils

Present Worth: $ 171,100
Capital Cost: $ 128,800
Annual O&M: $ 1,000
Time to Implement: 6 months - 1 year

This alternative would remove the site soils that are the most heavily contaminated. These soils were designated as group 1 soils in the FS. These soils are contaminated by multiple contaminants at levels greatly exceeding the SCGs. The volume of soils estimated for removal is approximately 475 cubic yards. The remainder of the alternative would involve backfilling the excavation and covering the remaining soils above SCGs.

This cover would consist of six inches of soil covered with another six inches of top soil that would then be graded and seeded. The area of the site along the stream bank that is too steep for the placement of the soil cover would be lined with a geofrabric and then have rip rap placed over it to prevent erosion and direct contact.

Because this alternative would leave contaminated soils on the site, future uses of the site would need to be restricted to be protective of human health and the environment. This would require that an annual operation and maintenance program be established. (See Figure 2)

However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

Alternative 4
Removal of Group 2 Contaminated Soils

Present Worth:$ 235,600
Capital Cost:$ 182,500
Annual O&M:$ 1,000
Time to Implement: 6 months - 1 year

This alternative would remove the site soils that are heavily contaminated with one of the main site contaminants (Group 2 soils), and includes all of the contaminated soils along the creek bank. The removal of the contaminated soils along the creek bank would eliminate the need for the geofrabric and riprap in this alternative. The volume of soils estimated for removal is approximately 1039 cubic yards. This alternative would also include backfilling the excavation, regrading the slopes along the creek bank and covering the remaining soils above SCGs.

This cover would consist of six inches of soil covered with another six inches of top soil that would then be graded and seeded.

Because this alternative would leave contaminated soils on the site, future uses of the site would need to be restricted to be protective of human health and the environment. This would require that an annual operation and maintenance program be established. (See Figure 3)

However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

Alternative 5
Removal of All Soils Above Cleanup Goals (Group 3 Soils)

Present Worth:$ 385,600
Capital Cost:$ 385,600
Annual O&M:$ 0
Time to Implement: 6 months - 1 year

This alternative would remove all soils above SCGs. The actual limits of excavation will be determined during remedial design and/or construction. All soils which pose a significant threat to human health associated with direct contact exposures as well as those soils which pose a significant environmental threat associated with potential impacts to groundwater, surface water and sediments will be excavated. The volume of soils estimated for removal is approximately 1937 cubic yards. The contaminated soils at the site would be excavated and disposed of off -site. The site within the area of the excavation, would then be regraded and seeded.

There would be no operation and maintenance required at the site. Since the contaminated soils would be removed from the site, there would be no need to restrict future use of the site. (See Figure 4).

However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

7.2 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 included 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. All alternatives except for the no action alternative would meet the guidance prescribed in NYSDEC TAGM 4046 for metals contamination.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.
All alternatives, except for Alternative 1, the no action alternative, eliminate the exposure route via direct contact for the contaminated materials on the site either by covering the contaminated soils or removing them from the site. The alternatives , other than no action, would also be protective of the environment by reducing the risk of contaminant migration from the site to the creek. The no action alternative would continue to pose a potential threat to human health and the environment as nothing would be done to address the exposure pathways or the potential for contaminant migration.

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 of the remedy are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives. There would be no short term impacts associated with Alternative 1. The other alternatives would have short term impacts associated with the potential of exposure to contaminated soils during the soil excavation/covering. These potential exposures would be mitigated with the use of engineering controls during the remedial action.

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 would have no long term effectiveness as nothing would be done to address the wastes at the site. Alternative 2 would rely solely on the effectiveness of the soil cap to reduce the threat from direct contact and contaminant migration. Alternative 3 would leave some contaminated soils on the site . The remaining soils would be covered with a soil cap, therefore, reducing the risks associated with the site. Alternative 4 would remove more of the contaminated soils than Alternative 3 and also cover the remaining soils further reducing the risk from direct contact and contaminant migration. Alternative 5 would remove all soils above SCGs and therefore, be the most permanent remedy for the site.

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. Technologies that could reduce the toxicity, mobility or volume of the contaminants on the site were determined to be inappropriate for the relatively small volume of waste at the site and the site conditions. Therefore, these technologies were screened out of consideration in the feasibility study. None of the alternatives will reduce the actual toxicity, mobility or volume of the wastes; however, in terms of the site, Alternative 2 would reduce the threat of direct contact with the contaminated soils along with the reduction of erosion of surface soils due to the capping of the site. Alternatives 3 and 4 each call for the removal of contaminated soils, with Alternative 4 removing approximately 564 more cubic yards that Alternative 3. Consequently, Alternative 4 provides a greater reduction of the toxicity, mobility and volume of the wastes at the site than Alternative 3. Alternative 5 would remove all soils above SCGs and therefore, provide the greatest reduction of toxicity, mobility, and volume of wastes at the site.

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 material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc. All of the alternatives considered are considered to be implementable.

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.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is evaluated 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 in 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.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 5, the removal of all soils above SCGs, as the remedy for this site.

This selection is based on the evaluation of the five alternatives developed for the site. With the exception of the no action alternative, each of the alternatives addresses the contamination at the site. The major difference between alternatives 2, 3 and 4 is the amount of contaminated soil that would remain on the site. These three alternatives are protective of human health and the environment because the risk from direct contact with the contaminated soils and the potential for erosion of the contaminated soils from the site are addressed. Alternative 5 has been selected because it provides the greatest long term effectiveness and permanence and it provides the greatest reduction of toxicity, mobility and volume of waste from the site. The selected remedy also provides for unrestricted future use. Following the completion of the remedy, the site will be able to be considered for delisting from the registry of inactive hazardous waste sites.

The estimated present worth cost to implement the remedy is $385,600. The cost to construct the remedy is estimated to be $385,600 and there will be no annual operation and maintenance cost for this alternative. It should be noted that the estimated remedy cost is based on an assumed depth of excavation of six feet below grade. This is likely to be a very conservative estimate since the majority of soils exceeding the clean up goals encountered during the remedial investigation were found at depths less than six feet with much of these soils at a depth of less than four feet.. The

actual limits, including the depth of excavation, will be determined during remedial design and/or construction.

The elements of the proposed 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 of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

2. The proposed remedy consists of:

- the removal and disposal of contaminated soils,
- and the regrading of the site within the area of the excavation. However, the debris and other trash (non-hazardous) which exists at the site can not be addressed under this program.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation 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.
- A public meeting was held on March 13, 2000 to present the Proposed Remedial Action Plan.
- In March 2000 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

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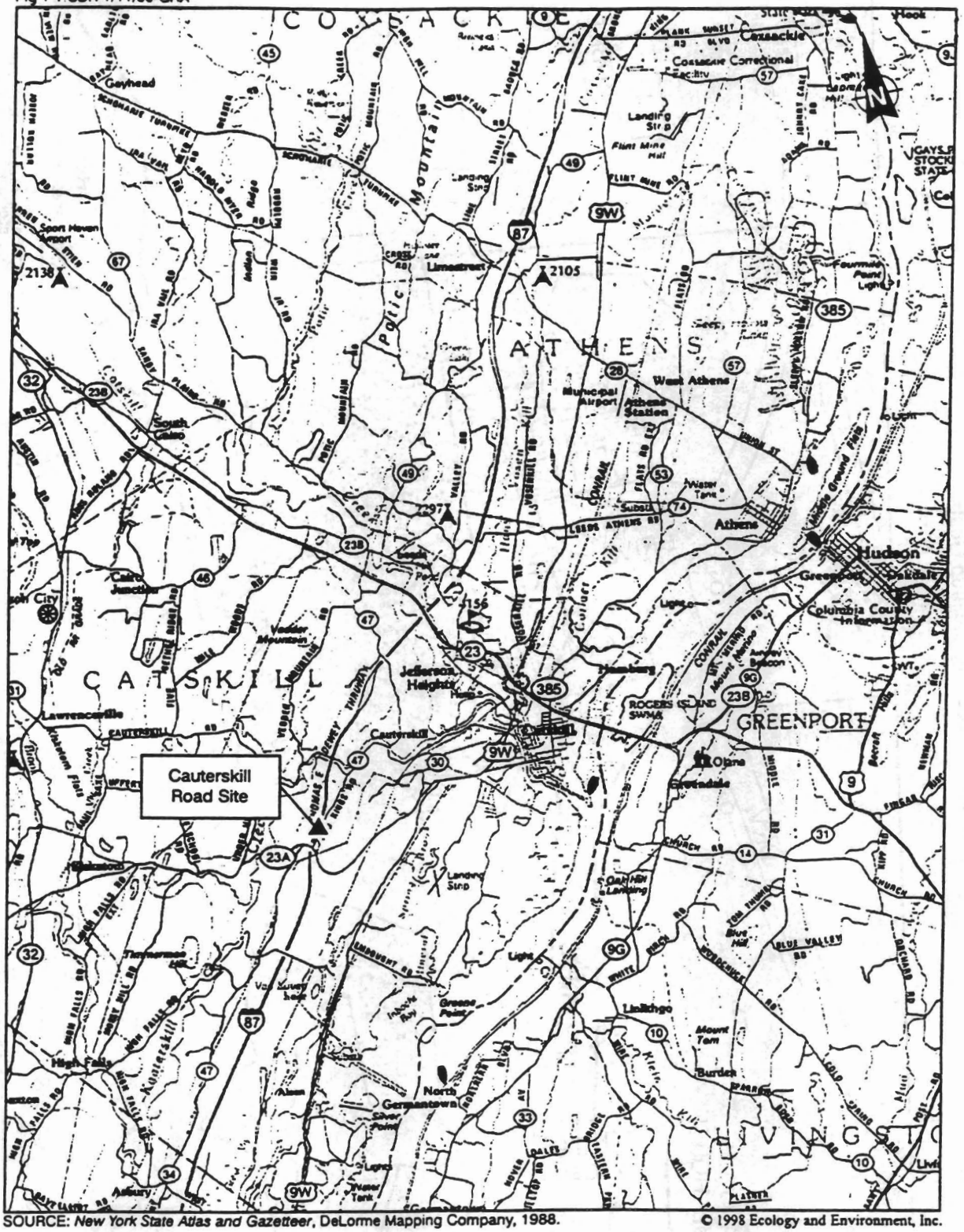


SOURCE: *New York State Atlas and Gazetteer*, DeLorme Mapping Company, 1988.

APPROXIMATE SCALE
0 1 2 Miles

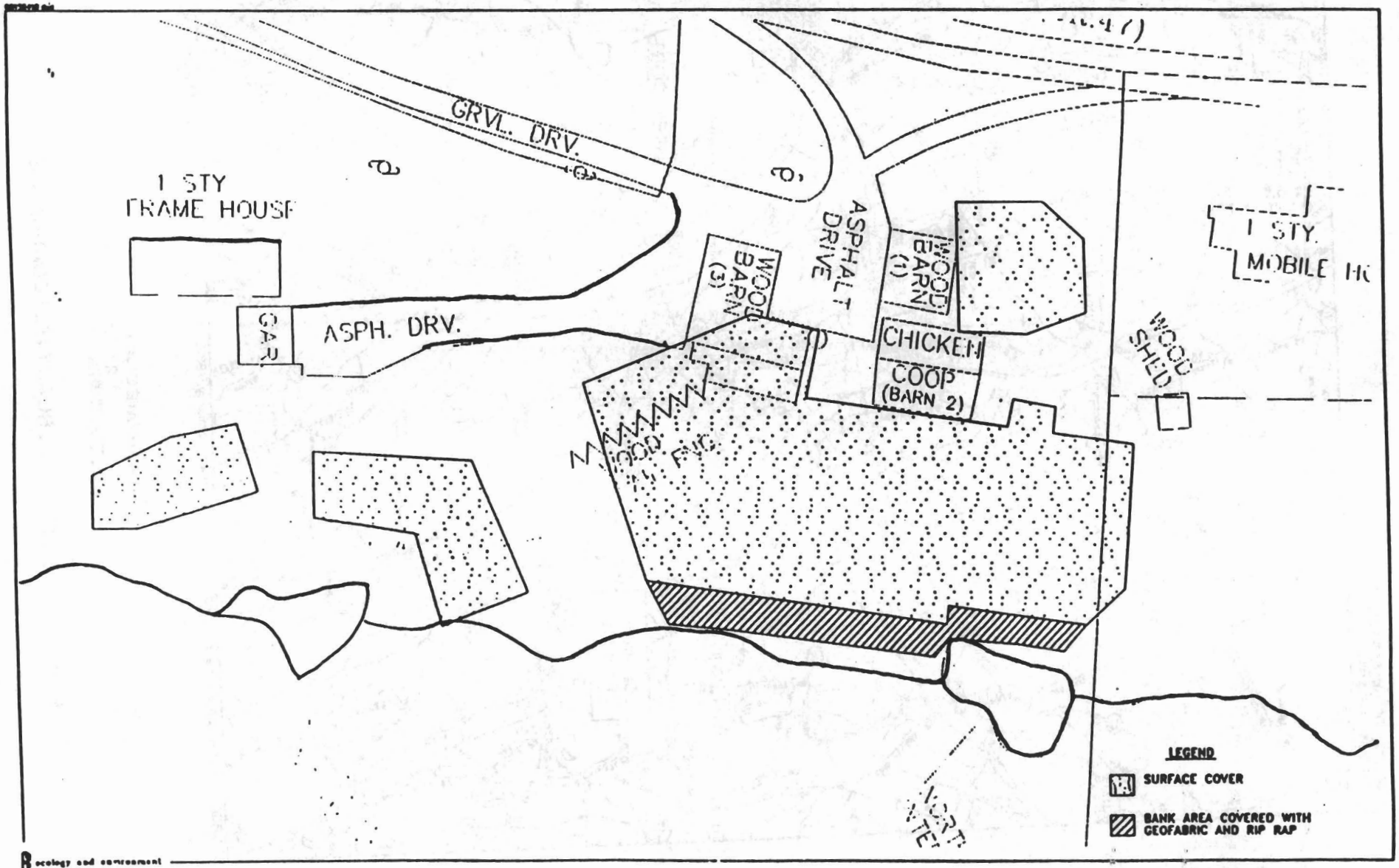
Figure 1 CAUTERSKILL ROAD SITE LOCATION MAP

Cauterskill Road Site

Alternative 2

Figure 2

Covering of Soils Exceeding Cleanup Goals

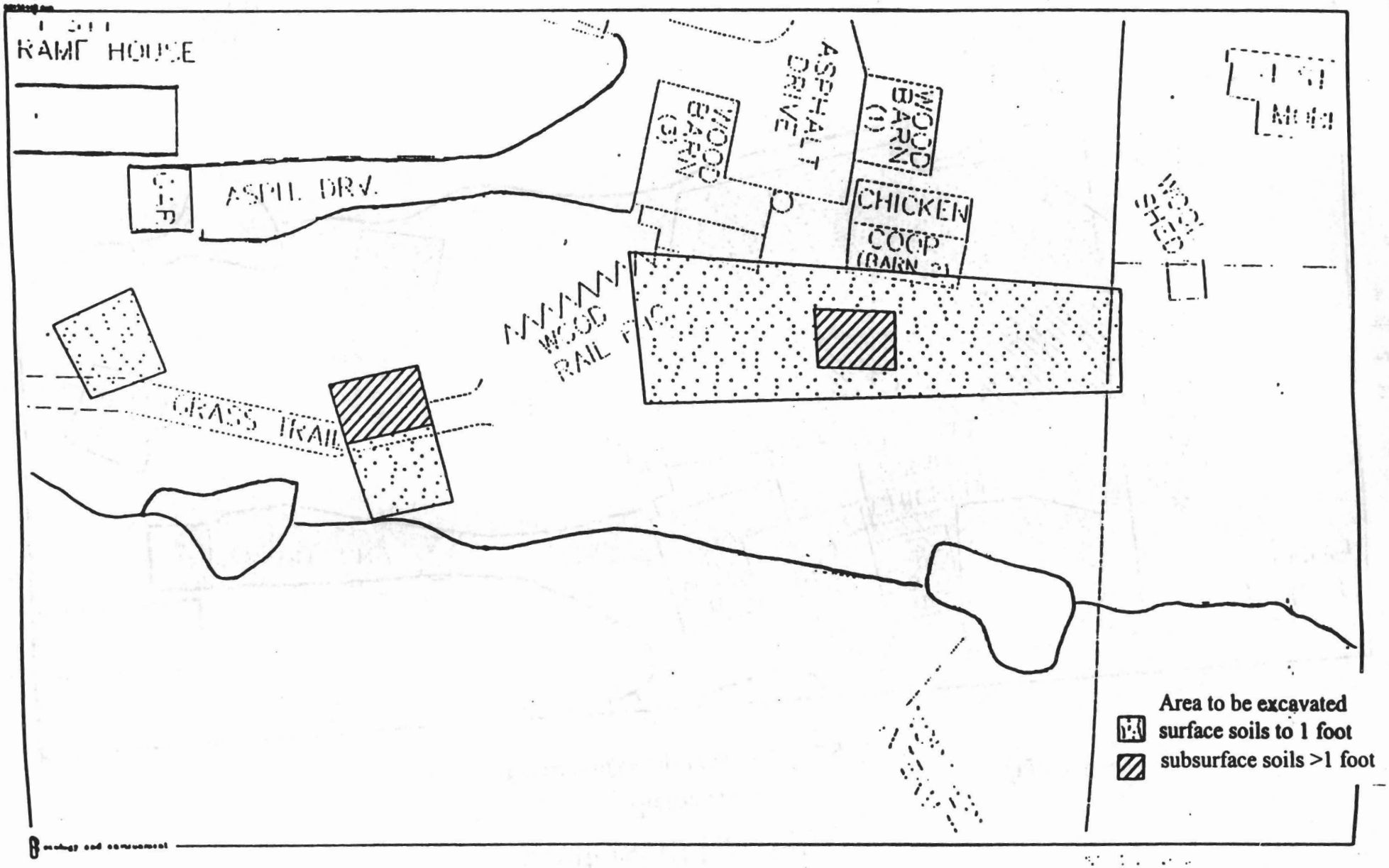


Cauterskill Road Site

Alternative 3

Figure 3

Removal of Group 1 Contaminated Soils

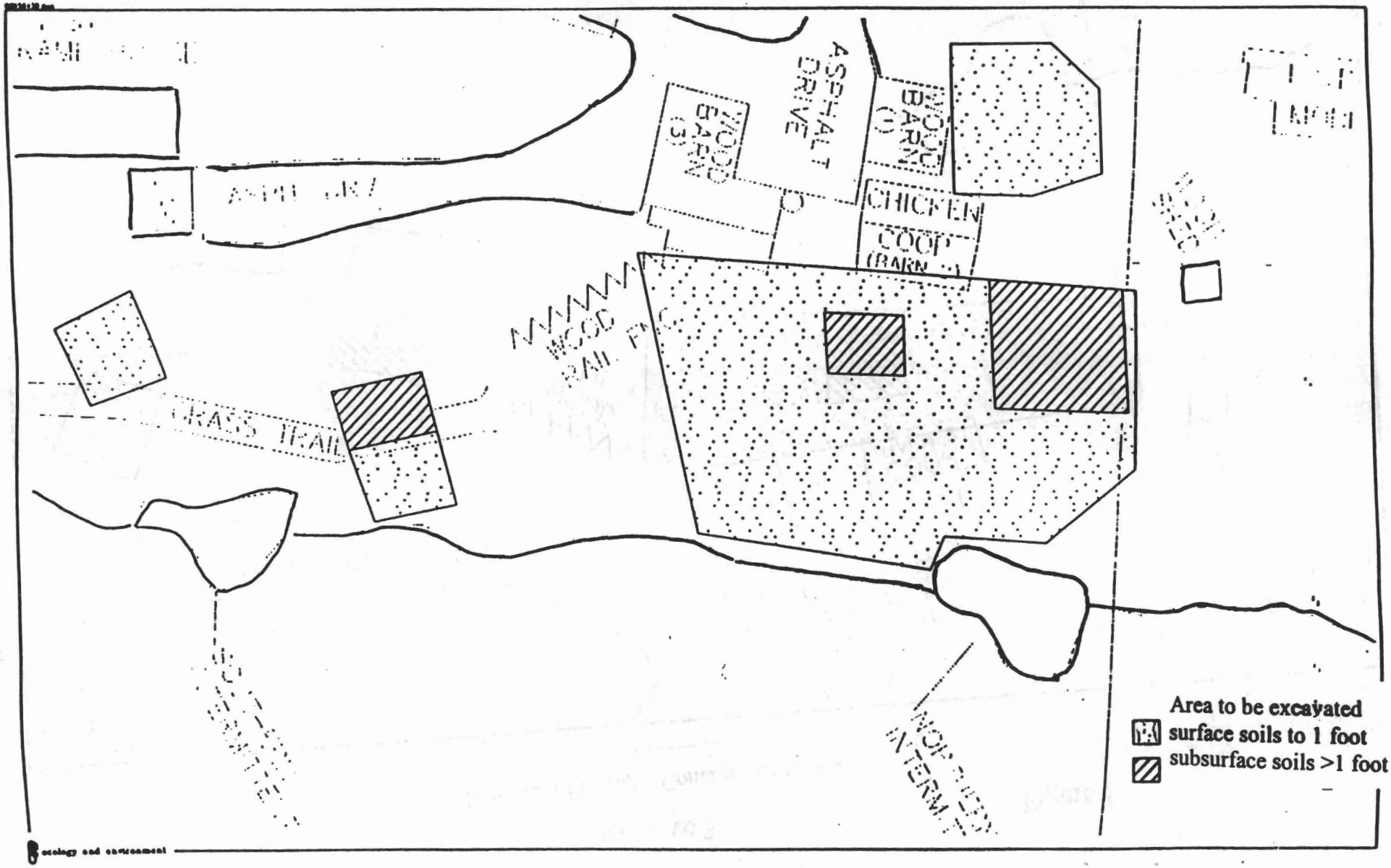


Cauterskill Road Site

Alternative 4

Figure 4

Removal of Group 2 Contaminated Soils



Cauterskill Road Site

Alternative 5

Figure 5

Removal of All Soils Exceeding Cleanup Goals

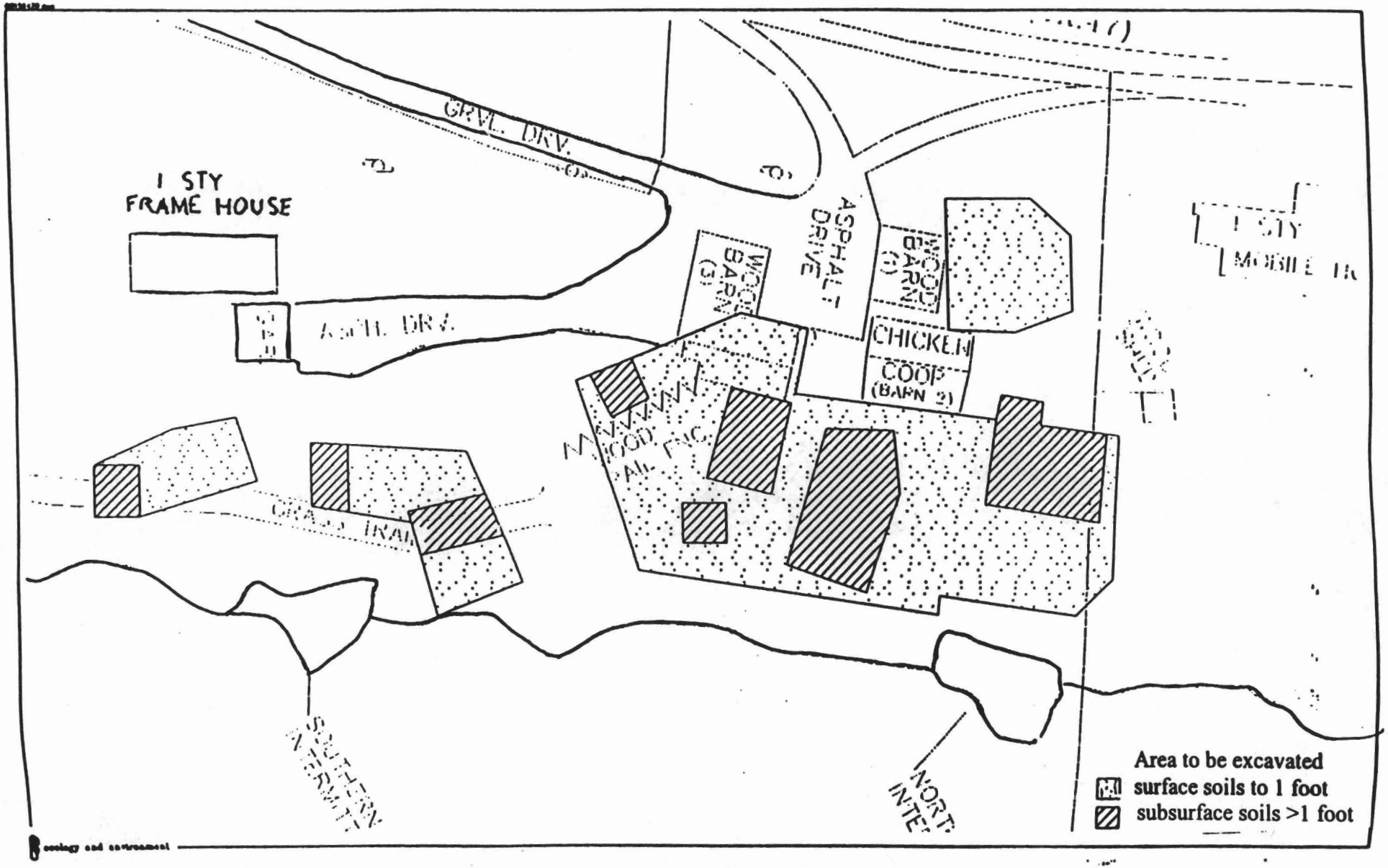


Table 1
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCGs	SCG (ppm)
soils	semivolatiles	Di-n-butyl phthalate	non detect - 14	1/21	8.1
		Benzo(a) anthracene	non detect - 11	5/21	0.224
		benzo(a)pyrene	non detect - 11	9/21	0.061
		benzo(b)fluoranthene	non detect - 9.7	2/21	0.87
		benzo(k)fluoranthene	non detect - 7.7	2/21	1.1
		chrysene	non detect - 12	4/21	0.4
		dibenzo(a,h)anthracene	non detect - 0.83	6/21	0.014
		inden(1,2,3-cd)pyrene	non detect - 1.8	1/21	0.87
Soils	inorganics	cadmium	non detect - 39.9	9/55	10
		chromium	7.3 - 865	14/55	24.8
		copper	12.9 - 4,600	14/55	59.9
		lead	8 - 1,160	2/55	400
		nickel	13.3 - 9,840	10/55	70.7
		zinc	43.2 - 5,760	11/55	305

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
No Action	$0	$0	$0
Covering soils exceeding cleanup goals	$53,800	$1,000	$81,100
Removal of group 1 soils	$128,800	$1,000	$171,100
Removal of group 2 soils	$182,500	$1,000	$235,600
Removal of all soils above cleanup goals	$385,600	$0	$385,600

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

Cauterskill Road Site
Record of Decision
{Catskill (T),Greene County}
Site No. 4-20-024

The Proposed Remedial Action Plan (PRAP) for the Cauterskill Road Site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on February 25, 2000. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the Cauterskill Road Site. The preferred remedy is the removal of all soils above SCGs, as the remedy for this site.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on March 13, 2000 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. No written comments were received.

The public comment period for the PRAP ended on March 27, 2000.

This Responsiveness Summary responds to all questions and comments raised at the March 13, 2000 public meeting.

The following are the comments received at the public meeting, with the NYSDEC's responses:

COMMENT 1: How far down the creek did you sample and is the water in the creek contaminated because the creek is used to water livestock?

RESPONSE 1: The water in the creek was sampled as far downstream as its confluence with Cauterskill Creek. No site related contaminants were found in the surface water downstream of the site.

COMMENT 2: what are the impacts to the drinking water wells in the neighborhood?

RESPONSE 2: There were no site related contaminants detected in the drinking water wells in the area.

COMMENT 3: Is the water in the creek a human health concern and is it safe to fill our swimming pool with the water from the creek?

RESPONSE 3: There are no human health impacts from using creek water associated from the site.

APPENDIX B

Administrative Record

APPENDIX B
ADMINISTRATIVE RECORD

1 - Proposed Remedial Action Plan Cauterskill Road Site, February, 2000

2 - Feasibility Study Cauterskill Road Site Catskill, New York, February, 2000, Ecology and Environment

3 - Final Remedial Investigation Report of the Cauterskill Road Site Catskill, New York, September 1999, Ecology and Environment