PROPOSED REMEDIAL ACTION PLAN

Gloversville Landfill
Town of Johnstown, Fulton County, New York
Site No. 518001
October 20, 1993

PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York Department of Health (NYSDOH) is proposing the extension of the city water supply to affected homes and the capping of the landfill for the Gloversville Landfill, Site # 518001 in Fulton County. This Proposed Remedial Action Plan (PRAP) identifies the preferred remedy, summarizes the other alternatives considered and discusses the rationale for this preference. The NYSDEC will select a final remedy for the site only after careful consideration of all comments submitted during the public comment period.

This PRAP is issued by the NYSDEC as an integral component of the citizen participation plan responsibilities provided by the New York State Environmental Conservation Law (ECL), 6NYCRR375, and the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986. This document is a summary of the information that can be found in greater detail in the Remedial Investigation/Feasibility Study (RI/FS) report on file at the document repositories.

The NYSDEC may modify the preferred alternative or select another response action presented in this PRAP and the RI/FS report based on new information or public comments. Therefore, the public is encouraged to review and comment on all of the alternatives identified here.

The public is encouraged to review the documents at the repositories to gain a more comprehensive understanding of the site and the investigations conducted there. The project documents can be reviewed at the following repositories.

Gary T. Margiotta, Clerk, City Clerk's Office, City Hall, Frontage Road, Gloversville, NY. 12078 (518) 773-4542.

Gloversville Free Library, 58 East Fulton Street, Gloversville, NY. 12078. (518) 725-2815.

Fulton Montgomery Community College, College Library, Route 67, Johnstown, NY. 12095. (518) 762-4651.

The project documents may also be reviewed at: Att: Mr. Guy T. Bobersky, New York State Department of Environmental Conservation, Room 222, 50 Wolf Road, Albany, NY 12233. (518) 457-1641.

Written comments on the PRAP can be submitted to Mr. Bobersky at the above address.

The **public comment period** on the RI/FS, the PRAP and the preferred remedy is **from October 20, 1993 to November 19, 1993**. A **public meeting** to discuss the work done to date and receive the public's input is **scheduled for 7:00 PM on November 4, 1993 at the Gloversville High School auditorium on Lincoln Street in Gloversville.**

SITE LOCATION AND DESCRIPTION

The Gloversville Landfill, Site # 518001 in Fulton County, is located on East Fulton Street Extension (Route 29A) in the Town of Johnstown (see Figure 1, Location Map and Figure 2, Site Sketch Map). The site is east of the City of Gloversivlle and north of New York State Route 29A. It occupies about 80 acres of a 175 acre parcel.

The surrounding area is largely rural with about 100 residences within one-half mile of the landfill, and the City of Gloversville is located about three-quarters mile to the west. The area surrounding the landfill is densely wooded along the east, north and west sides. South of the site, private residences are located on East Fulton Street Extension beyond a wooded buffer area. The site slopes from south to north with highest elevation near the entrance to the landfill at Route 29A. The landfill itself consists of two terraces with the top relatively flat. Immediately south of the landfill is a large open borrow pit from which sand was excavated for use as cover material.

The area surrounding the landfill is characterized by relatively flat wetland areas and numerous glacially derived terraces and hills. Beaver ponds are located on the northeast and northwest borders of the landfill. The pond on the northeast flows into a tributary to the Anthony Creek which is dammed forming another beaver pond prior to flowing northwesterly to Anthony Creek. The pond on the northwest forms the headwaters of Anthony Creek which flows northeasterly to the Great Sacandage Lake about three miles away. Less than four miles to the north of the site, the foothills of the Adirondack Mountains rise steeply to the north.

SITE HISTORY

The Gloversville Landfill reportedly has been used for open refuse disposal from near the turn of the century until disposal practices were upgraded to sanitary landfill procedures in 1958. The site accepted all wastes generated by the City of Gloversville and part of the Town of Johnstown including domestic, commercial and industrial wastes. The landfill has received large amounts of sewage treatment plant sludge and tannery wastes.

In 1979, fish kills were reported due to leachate entering the beaver pond forming the headwaters of Anthony Creek. Inspection of the landfill operations noted leachate outbreaks, poor cover resulting in protruding waste, and odors. The landfill was closed in July 1989 as required by a New York State Department of Law Order on Consent which was signed for the remediation of the Site. As a consequence of the Order on Consent, the City of Gloversville applied for and was awarded an Environmental Quality Bond Act financial assistance grant to fund the performance of a RI/FS of the site.

Other investigations of the Gloversville Landfill which will be a part of the administrative record include a soil resource report prepared by the Soil Conservation Service for the City of Gloversville in December 1976; a September 1980 report prepared by Dunn Geoscience Corporation; SCS Engineers wrote a report titled Evaluation of Operations for the Planning Department of Fulton County in April 1981; and a Phase 1 Investigation of the Gloversville Landfill prepared by Wehran Engineering, P.C. in April 1986.

CURRENT STATUS

The City of Gloversville, under the State Title 3 Program, initiated a RI/FS in 1989 to address the contamination at the site. The purpose of the RI/FS was to define the nature and extent of any contamination resulting from previous activities at the site. The RI/FS was conducted in phases. Reports entitled, Remedial Investigation Report, dated 10/92 and Feasibility Study Report, dated 12/92, have been prepared describing the activities of the RI/FS in detail.

Summary of the RI/FS

The RI/FS at the site included updating the maps of the site; a stratigraphic study of the site and environs; an air survey; waste, soil and stream sediment sampling; surface water and groundwater sampling; flow measurements on Anthony Creek; private water well sampling; wildlife studies and evaluation of the information collected to address the contamination at the site.

The top layer of soil; ie, the overburden, ranges in thickness from 10 to 70 feet and is highly permeable allowing groundwater to move easily through it. Below the overburden is the lodgement till which is dense and clay rich, does not allow water to move through it easily slowing down the vertical migration of groundwater and it ranges from 0 to over 65 feet thick. Beneath this lodgement till lies bedrock, a brownish-dark gray shale called the Utica Shale.

The RI/FS revealed through the excavation of test pits and drilling of boreholes an average waste thickness of 12 feet in the "inactive area" of the landfill. The waste in this area is comprised largely of mixed animal hides, leather scraps, glass and wood fragments, and is currently overgrown with brush and trees. The waste in the "active area" of the landfill is a mix of household, tannery, and demolition waste and is located in the central portion of the landfill where disposal continued throughout the 1980's. The depth of the waste in this area ranges from 70 to 80 feet thick.

As a result of the air survey, inhalation hazards from air contaminants due to the Gloversville Landfill were shown not to be present. Five VOCs were detected in ambient air samples collected at the site, all at concentrations well below Ambient Guideline Concentrations. Ambient particulate and chromium concentrations were also below applicable standards.

Contaminants were measured at the source at the Gloversville Landfill in both leachate and the surface and subsurface soils. The soils have little potential for direct migration as most are covered with either clean sand or vegetation. These contaminants in the soils do have the potential to leach out over time if left exposed to the elements. The leachate is expected to migrate with the groundwater that passes through and under the site. At the waste disposal area, numerous volatile organic compounds (VOCs), semi-volatile organic compounds and metals were found in the leachate and landfill soils. Chromium and ammonia nitrogen were commonly detected in the leachate. Additionally, pesticide compounds were found in the leachate, test pit samples and surface soil samples (pesticide contamination has not migrated off-site). The chromium concentration in one of the Toxicity Characteristic Leachate Procedure (TCLP) samples from the "inactive" area exceeded toxicity characteristic limits established by the EPA indicating that the refuse sampled is a characteristic hazardous waste.

Analysis of surface waters adjacent to the Gloversville Landfill showed little indication of VOC and semi-volatile organic contamination. Iron exceeded surface water standards at all sampling locations and zinc, aluminum, copper and lead also exceeded standards, but less frequently. Un-ionized ammonia concentrations were frequently detected at concentrations exceeding surface water standards.

Most of the overburden groundwater flows to the northeast and discharges to the beaver ponds and the Anthony Creek with a smaller component of groundwater flow entering the bedrock aquifer. The data show that the beaver ponds and surface water in the vicinity of the landfill are impacted by the landfill derived contaminants with metals and other inorganics in excess of surface water standards. Trace levels of VOCs were detected in groundwater from six of the groundwater monitor wells, with benzene exceeding groundwater standards in two of these wells. Samples collected from a monitoring well located in the northeast corner of the waste disposal area contained several VOCs at concentrations above groundwater standards. Semi-volatile organic contamination of groundwater appears limited to this area as well. Iron, aluminum, chromium, lead and manganese

were detected at concentrations above groundwater standards. Barium was found consistently above background levels and sodium concentrations were elevated in many of the deep groundwater monitor wells. Ammonia nitrogen concentrations exceeded groundwater standards in many of the shallow and bedrock monitor wells.

In general, the bedrock groundwater flows northeast. Downgradient bedrock wells have been shown to be impacted by the landfill derived contaminants. Contaminant movement in the bedrock aquifer is nearly exclusively through fractures that are believed to trend northeast-southwest along the bedrock lows. These fracture sets create a primary flow direction toward the northeast. Data also indicate that contaminants are migrating in bedrock toward the southeast. This may be occurring primarily in the fractured uppermost portion of the bedrock, where flow may follow the bedrock surface toward the southeast. Continued migration to the southeast may be through secondary fractures that exist perpendicular to the primary northeast-southwest trend.

Summary of Human Exposure Pathways

Private well contamination of residences in the landfill is limited to the high sodium levels which were detected in many of these wells and ammonia nitrogen concentrations which exceeded groundwater standards in a few of the private wells. Barium was detected in several of the private wells at concentrations significantly below drinking water standards, but at levels that may indicate an influence from the landfill.

The data indicate a contaminant plume is migrating away from the landfill. Both landfill groundwater monitoring wells and private drinking water wells showed a pattern of contamination for sodium, barium and ammonia which follows the groundwater flow. These analytes, while not contributing to adverse effects at present, may be precursors to the migration of additional contaminants which can contribute to increased risk to human health. Sodium concentrations exceeding groundwater standards were detected in many of the private wells and ammonia nitrogen concentrations exceeding groundwater standards were detected in a few of the private wells. Barium was detected in several of the private wells at concentrations significantly below drinking water standards.

A baseline risk assessment was performed to evaluate the impact of the contamination at the Gloversville Landfill and to assess whether actual or threatened releases of hazardous substances pose potential risks to human health. Possible pathways of exposure for those who may be on the site itself include inhalation hazards associated with breathing contaminated dust or vapors from the site and skin contact hazards or ingestion hazards associated with touching and inadvertent swallowing of soils, sediments, leachate, surface water or groundwater contaminated by the site. Possible pathways of exposure for those off-site include skin contact hazards or ingestion hazards associated with touching and inadvertent swallowing of sediments, leachate, surface water or groundwater contaminated by the site. These are all possible routes of exposure from the site. The baseline risk assessment identified ingestion of groundwater as the most probable route of exposure contributing to the risk to human health from the site. Details of the risk assessment are found in the RI/FS in Chap. 6.

Summary of Environmental Exposure Pathways

An ecological assessment was also performed to determine potential impacts to nonhuman receptors exposed to chemicals of concern from the Gloversville Landfill. The approaches used in the ecological assessment are similar to those used for the human health risk assessment. Potentially exposed receptors are identified, and information on exposure and toxicity is combined to assess potential impacts. As there is little data available to evaluate, a comparison of contaminant concentrations to standards and criteria has been done rather than a quantitative risk assessment. The result of the ecological assessment is the aquatic life in the

surface water of the eastern tributary to Anthony Creek are potentially impacted due to the chemicals present from the landfill; macroinvertabrates at downstream locations in surface water are moderately impacted; the exposure concentrations of some metals are above acute and/or chronic toxicity levels in the surface water at the northeast of the site and in site groundwater; the ammonia concentration detected in surface water is significantly higher than the Ambient Water Quality Criteria as established by USEPA and may be adversely affecting the fish population; the bio-assay study indicated the contaminants present in the water of the Anthony Creek were sufficiently diluted about 0.5 miles downstream to support fish population; and adverse impacts to plants and terrestrial wildlife are unlikely.

In summary, the data indicate that while most contaminants are not migrating from the landfill at high concentrations, a contaminant plume is evident. Based on the hydrogeologic study, and supported by chemical data, this plume appears to primarily discharge through preferred flow channels to Anthony Creek and the beaver pond adjacent to the landfill in the northeast. A portion of the groundwater flow passes beneath the beaver pond and some or all of the underflow may discharge to the next pond or to Anthony Creek. The site, if left as it is, poses a threat to human health through ingestion of groundwater due to migration of contaminants off-site. Environmental risks posed by the site appear to be limited to impacts to aquatic life in the surface water of the eastern tributary to Anthony Creek. Neither plants nor terrestrial wildlife appeared to be adversely impacted as a result of the landfill.

ENFORCEMENT STATUS

The work at the Gloversville Landfill is being done pursuant to a 1989 Order on Consent by the New York State Attorney General which was signed to implement a RI/FS at the site. This Order on Consent allowed the City of Gloversville to apply for assistance under the Environmental Conservation Law Title 3 Bond Act of 1986 which provides up to 75% reimbursement to the City for eligible remedial costs of the RI/FS. It is expected the City will apply for further assistance in order to proceed with the design of the remedial action and for implementation of the remedial action.

GOALS FOR THE REMEDIAL ACTION

Goals for the remedial program have been established through the remedy selection process stated in 6NYCRR 375-1.10. These goals, established under the guideline of meeting all standards, criteria and guidance (SCGs) and protecting human health and the environment, include:

* Reduce, control, or eliminate the generation of leachate within the fill mass.

* Eliminate the threat to surface waters by eliminating any future contaminated surface run-off from the contaminated soils on site.

* Eliminate the potential for direct human or animal contact with the contaminated soils on site.

* Prevent to the extent possible,migration of contaminants in the landfill to groundwater.

* Provide for attainment of SCGs for groundwater and surface water quality at the limits of the area of concern.

SUMMARY OF THE EVALUATION OF ALTERNATIVES

Description of Alternatives

Potential remedial alternatives for the Gloversville Landfill were identified, screened and evaluated in the RI/FS. The potential remedies are intended to address the contaminated solid

waste, soils, leachate, surface water and groundwater at the site. Four alternatives were subject of a detailed analysis. These alternatives were assembled to provide a range of options with respect to cost and their effectiveness at reducing risk to human health and the environment. A summary of the detailed analysis follows.

Alternative No. 1: No Action

- Site Monitoring including sampling soils, sediments, air, surface water, groundwater and private wells to assess changes in landfill impacts over time
- Public Awareness Program including meetings and informational documents to increase public knowledge of the site's impacts
- Present Worth Cost $3,030,000
- Capital Cost $ 190,000
- Annual O&M Cost $ 229,000
- Time to Implement Immediate

This alternative is evaluated as a statutory requirement and as a basis for comparison. It requires public information and continued monitoring only, allowing the site to remain in its existing state.

Alternative No. 2: Limited Action

- Site Monitoring
- Public Awareness Program
- Site Access Restrictions including fencing, warning signs and deed restrictions
- City Water to Residences including extending city water service to affected homes
- Present Worth Cost $5,210,000
- Capital Cost $3,550,000
- Annual O&M Cost $ 134,000
- Time to Implement 18 - 24 months

This alternative provides a reduction in current landfill based risks associated with direct site exposure and affected private water wells. Continued Site Monitoring and the Public Awareness Program are identical to Alternative Number 1: No Action, except monitoring of private wells is unnecessary due to the water line.

Alternative No. 3: Impermeable Cap/City Water Line

- Site Monitoring
- Public Awareness Program
- Site Access Restrictions
- City Water to Residences
- Landfill Cap including site regrading, waste consolidation, Part 360 cap with drainage net, draining adjacent beaver pond in the northeast, addressing infiltration from the borrow pit in the south and stormwater retention basins
- Present Worth Cost $28,340,000
- Capital Cost $25,950,000
- Annual O&M Cost $ 193,000
- Time to Implement 24 - 36 months

This alternative provides the same health based risk reductions as Alternative No. 2 with an added reduction in contaminant loading to the groundwater and surface water through a reduction in leachate production by capping the landfill. All other elements are similar to Alternative Number 2: Limited Action.

Alternative No. 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat

- Site Monitoring
- Public Awareness Program
- Site Access Restrictions
- City Water to Residences
- Landfill Cap
- Groundwater Pump and Treat System to intercept the migrating plume
- Present Worth Cost $44,510,000
- Capital Cost $31,950,000
- Annual O&M Cost $ 1,012,000
- Time to Implement 24 - 36 months

This alternative provides all the risk reductions associated with Alternative No. 3, and in addition, actively treats contaminated groundwater migrating off-site in the vicinity of the landfill through groundwater pumping with treatment of the pumped water. This system, in effect, stops any additional contaminant plume migration off-site in the overburden.

Evaluation of Alternatives

The remedial alternatives have been compared against the criteria identified in the NYSDEC's Technical and Administrative Guidance Memorandum (TAGM) Number 4030, "Selection of Remedial Actions At Inactive Hazardous Waste Sites". A detailed discussion of the evaluation criteria and the comparative analysis is contained in the Feasibility Study Report. The following is a brief summary of the comparative analysis contained in the RI/FS.

The first two criteria are termed threshold criteria, indicating that each alternative evaluated at this stage must satisfy the criteria in order to be eligible for selection as a remedy.

1. Protection of Human Health and the Environment. This criteria is an overall assessment of protection based on a composite of all other evaluation criteria.

Alternative Number 1: No Action would not provide any additional protection over existing conditions which are adversely impacting both groundwater and surface water. Alternative Number 2: Limited Action would provide protection against ingestion of contaminated groundwater by supplying city water in place of private wells and partial protection of exposure due to contact with contaminated soils by limiting access with fencing. Alternative Number 3: Impermeable Cap/City Water Line would provide similar protection as Alternative Number 2 for ingestion of contaminated groundwater and would provide additional protection from exposure due to contact and would minimize additional generation of contaminated groundwater due to reduced infiltration and percolation through the landfill by capping the site. Alternative Number 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat would provide similar protection in all categories as Alternative Number 3 and would additionally collect contaminated groundwater for treatment to reduce the discharge of contaminants to the surface water.

2. Compliance with Applicable Standards, Criteria, and Guidance (SCG's). Compliance with SCG's addresses whether or not a remedy will meet applicable environmental laws, regulations, standards and guidance.

Due to the size of the Landfill and the extent of groundwater contamination off-site, attainment of all SCG's is impossible currently. The waste mass cannot be treated to completely eliminate a continuing source of contamination. Partial attainment of some SCG's, such as surface water and groundwater standards, is possible with current technology in order to minimize the adverse impacts of the site.

Alternative Number 1: No Action would not meet any SCGs as it leaves the site in its present condition which is adversely impacting both human health and the environment. Alternative Number 2: Limited Action would only meet drinking water standards due to the replacement of private wells with city water. Alternative Number 3: Impermeable Cap/City Water Line would meet drinking water standards similarly as in Alternative Number 2 and additionally would partially meet surface water and groundwater standards and guidance by reducing infiltration and percolation through the landfill. Alternative Number 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat would provide similar attainment of SCGs as Alternative Number 3 and would further partially meet surface water and groundwater standards and guidance due to the collection of contaminated groundwater.

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

3. Long-term Effectiveness and Permanence. As wastes will remain on site after the selected remedy has been implemented, the following need to be evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risks, and 3) the reliability of these controls.

Alternative Number 1: No Action would not provide any reduction in existing risk due to the site. Alternative Number 2: Limited Action would not reduce risk at the site but merely limits access to the site with fencing; however, it would reduce risk due to ingestion of contaminated groundwater due to the replacement of private well water with city water. The city water supply would effectively reduce the risk associated with ingestion of contaminated groundwater for the long term. Alternative Number 3: Impermeable Cap/City Water Line would provide similar reduction in risk due to ingestion of contaminated groundwater as in Alternative Number 2 and would provide additional long term reduction in risk at the site due to the placement of the cap which would reduce exposure due to contact with contaminated soils. It also would reduce risks from contaminated surface water and groundwater as the cap would minimize the infiltration and percolation through the landfill which would limit generation of contaminated groundwater. The effectiveness of the city water line is similar to Alternative Number 2. The cap would effectively reduce infiltration and percolation through the landfill by about 98 percentum, consequently, generation of contaminated groundwater would also be reduced. The city water supply and the cap would both be reliable long term controls. Alternative Number 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat would provide similar reduction in risk as Alternative Number 3 but would further reduce generation of contaminated groundwater by collecting contaminated groundwater for treatment to reduce the discharge of contaminants to the surface water. The effectiveness and reliability of Alternative Number 4 over the long term is similar to Alternative Number 3.

4. Reduction of Toxicity, Mobility or Volume. In the remedy selection process, preference is given to alternatives that permanently reduce the toxicity, mobility or volume of the wastes at the site.

Alternative Number 1: No Action would not change the existing conditions which are adversely impacting both groundwater and surface water as no treatment of the waste is provided. Alternative Number 2: Limited Action is similar to alternative Number 1 as it would not change the existing conditions of the wastes which are causing adverse impacts to both groundwater and surface water. Alternative Number 3: Impermeable Cap/City Water Line would provide reduction in mobility of the contaminants due to the placement of the cap which would effectively reduce infiltration and percolation through the landfill limiting the transport of wastes through groundwater. It would not reduce either the toxicity or the volume of the wastes present at the site. Alternative Number 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat would provide additional reduction in mobility by collecting contaminated groundwater. While the existing condition of the wastes is not changed as no treatment is performed, hence, no reduction in toxicity or volume, this alternative would provide for collection of contaminated groundwater for treatment to reduce the discharge of contaminants to the surface water. The treatment of the contaminated groundwater would produce residuals which need proper disposal.

5. Short-term Impacts and Effectiveness. This criterion compares the adverse impacts to the community, remedial workers and the environment resulting from the implementation of each remedy. The time necessary to implement each remedy is considered in comparing the time associated with the adverse impacts.

Alternative Number 1: No Action would not present any significant adverse short-term impacts as it leaves the site in its present condition without any construction involved. Alternative Number 2: Limited Action is similar to Alternative Number 1 in that it would not present any significant adverse impacts even though it would provide for the installation of fencing around the site and the installation of a water main. These additional construction activities are primarily away from the contaminated areas. The time to install the water line would take about 18 - 24 months. Alternative Number 3: Impermeable Cap/City Water Line

would present the potential for adverse impacts due to the construction activities necessary to implement this alternative. While the impacts associated with the installation of the fence and water line are similar to Alternative Number 2, the waste consolidation and capping activities would require health and safety measures protective of workers, the public and the environment. Dust control, stormwater runoff and air monitoring are examples of these measures to be taken to mitigate any adverse impacts due to the implementation of this alternative. This alternative would take about 24 - 36 months to implement. Alternative Number 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat, which would essentially consist of the same construction activities as Alternative Number 3, would have similar impacts to workers, the public and the environment, even with the added construction activities associated with the groundwater pump and treat system. The time frame to install this alternative is also similar to Alternative Number 3 and would take about 24 - 36 months.

6. Implementability. This criterion compares the technical and administrative difficulties in implementing each alternative.

Alternative Number 1: No Action would be easily implemented as there is no construction activity and most work is administrative in nature. Alternative Number 2: Limited Action is similar to Alternative Number 1 as there would be only little added construction activity associated with the fencing and water line installation; consequently, technically, it also would be easily implemented. The tasks associated with establishing a water district and with satisfying the criteria of the Gloversville Board of Water Commissioners would add administrative difficulty when implementing this alternative. Alternative 3: Impermeable Cap/City Water Line would involve more extensive construction activities than either Alternative Number 1 or Alternative Number 2 which would increase the difficulty to implement this alternative. The additional construction activities are on-site and are standard construction activities, consequently, they would not increase the technical difficulty significantly. Alternative 4: Impermeable Cap/City Water Line/Groundwater Pump and Treat, which essentially consists of standard construction activities as in Alternative Number 3, also is similarly technically implemented. The activities required to obtain a surface water discharge permit and dispose of the treatment residuals associated with the groundwater pump and treat system would add administrative difficulty to the implementation of this alternative.

7. Cost. The total cost for each alternative is compared on a 30 year present worth basis. The present worth cost includes capital cost and operation and maintenance (O&M) cost.

The costs associated with the four alternatives are shown in the following table.

Cost Element	Alternative No. 1	Alternative No. 2	Alternative No. 3	Alternative No. 4
Present Worth	$3,030,000	$5,210,000	$28,340,000	$44,510,000
Capital	$ 190,000	$3,550,000	$25,950,000	$31,950,000
Annual O&M	$ 229,000	$ 134,000	$ 193,000	$ 1,012,000

8. Community Acceptance. This criterion evaluates the concerns of the community regarding the RI/FS report and this PRAP. A "Responsivesness Summary" will be prepared that describes public comments received and how the NYSDEC will address the concerns voiced. If the final remedy selected differs significantly from the proposed remedy, notices to the public will be issued describing the differences and reasons for the changes.

SUMMARY OF THE PREFERRED REMEDY

This PRAP presents four potential alternatives to address the conditions present at the Gloversville Landfill. The alternatives were selected to provide a range of options available to protect human health and the environment at varying cost. The only alternatives which meet the threshold criteria; ie, protection of human health and the environment and compliance with applicable SCGs are Alternative Number 3 and Alternative Number 4. Alternative Number 3 would provide similar long term effectiveness and reduction of toxicity, mobility and volume as Alternative Number 4. Both Alternative Number 3 and Alternative Number 4 would have similar short term impacts and are readily implemented. Alternative Number 3 would be significantly lower in present worth cost than Alternative Number 4. Based upon this evaluation, the preferred remedy is Alternative Number 3: Impermeable Cap/City Water Line as it would minimize the risk to human health through providing city water to affected properties and eliminating contact with contaminated soils by capping the landfill, it would reduce the adverse impacts to the environment by minimizing additional generation of contaminated groundwater by capping the site to reduce infiltration and percolation through the landfill, it would maximize attainment of SCGs and retard the mobility of the waste using current technology, the degree of difficulty implementing the remedy would be no more than standard construction practice and it would be a cost effective remedy (See Figure 3, Proposed Site Modifications and Figure 4, Affected Wells).

The preferred alternative would not fully meet all SCGs as it does not treat the waste which results in a continuing discharge of contaminated groundwater which has been ongoing for decades. It is expected as the waste mass desaturates; ie, dries up, this discharge would diminish as little or no groundwater will be in contact with the waste. Until that time, which is estimated at about 11 years, the contaminated overburden groundwater would likely continue to discharge to the nearby surface water bodies and cause adverse impacts. As monitoring of groundwater pursuant to Part 360 is integral to the preferred remedy, a contingent remedy would be proposed. If the groundwater and surface water monitoring does not indicate improvement in the quality of the nearby surface water bodies, the remedy would be re-evaluated including further evaluation of a groundwater pump and treat system to address the continuing impacts to the environment.

This alternative proposes to require recording of a Deed Restriction by the City of Gloversville in the Fulton County Clerks Office, the implementation of NYSDEC approved institutional

controls and the notification to, and approval by, the NYSDEC and the NYSDOH of any physical alteration or construction constituting a substantial change of the use of the site. This Deed Restriction must meet the requirements set forth in 6NYCRR Part 375-1.6 as promulgated in May of 1992.

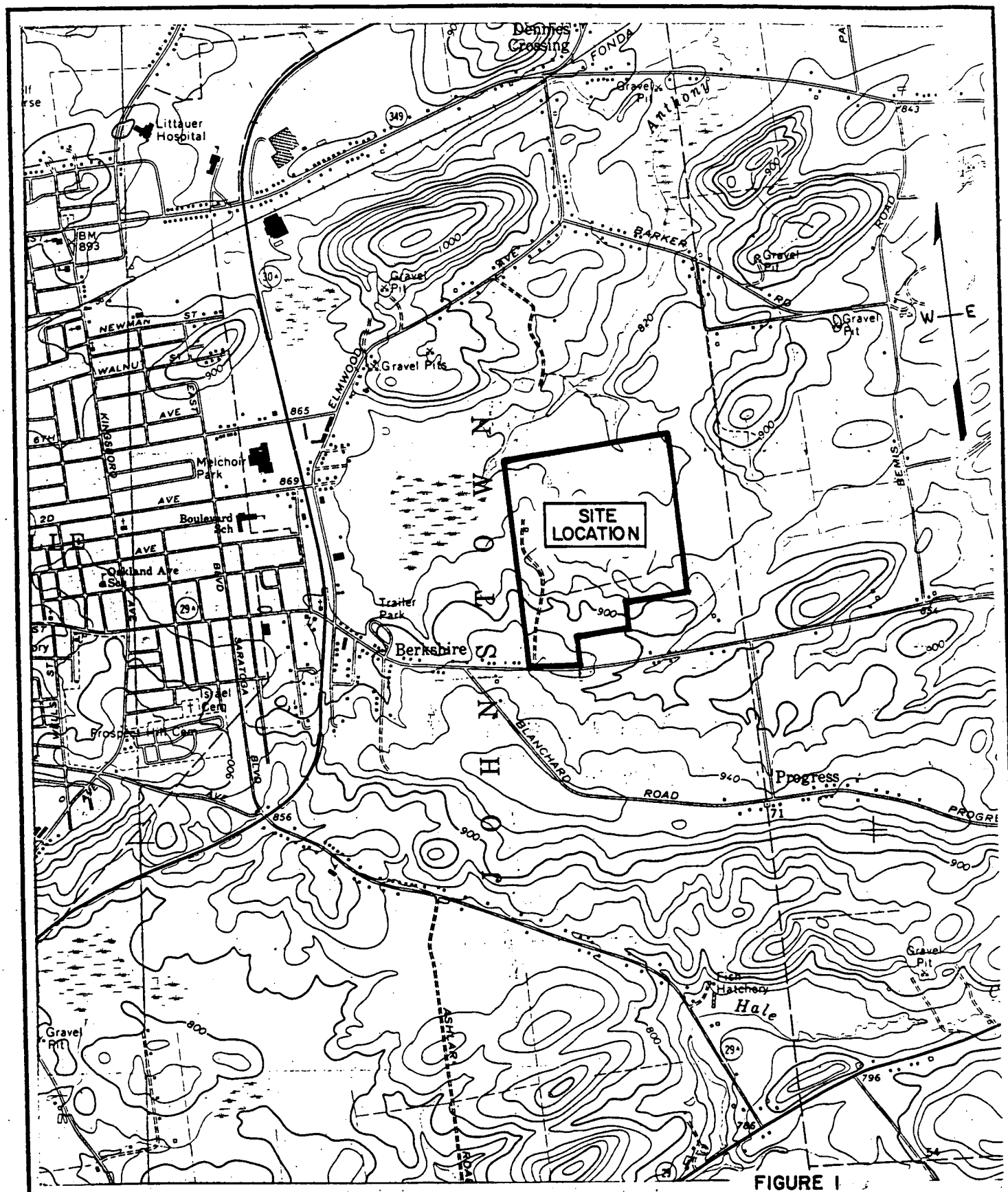


FIGURE 1

SOURCE NO. USGS GLOVERSVILLE QUADRANGLE

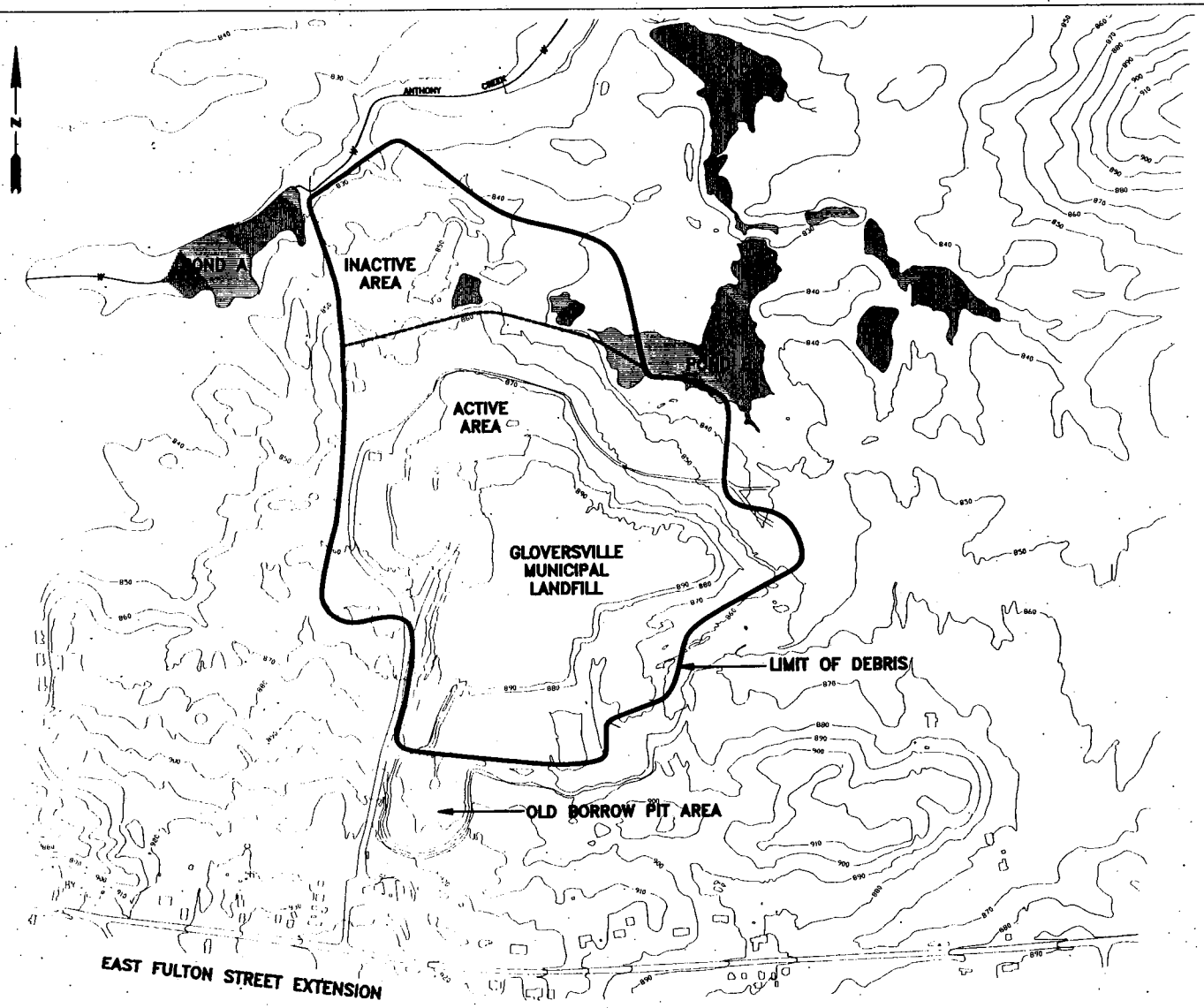
LOCUS PLAN

MUNICIPAL SANITARY LANDFILL
GLOVERSVILLE, N.Y.

TIGHE & BOND INC. CONSULTING ENGINEERS
WESTFIELD, MASS.

SCALE: 1"= 2000' DATE: OCT. 1992

NYSDEC SITE NO: 518001



NYSDEC SITE NO:518001

DRAWN BY: KJK	CHECKED BY: ESH,TMB	APPROVED BY: MRP

NO.	DATE	REVISIONS	BY
1	4/93	CORRECT DEBRIS LINE, ADD ACTIVE/INACTIVE AREAS	TMB

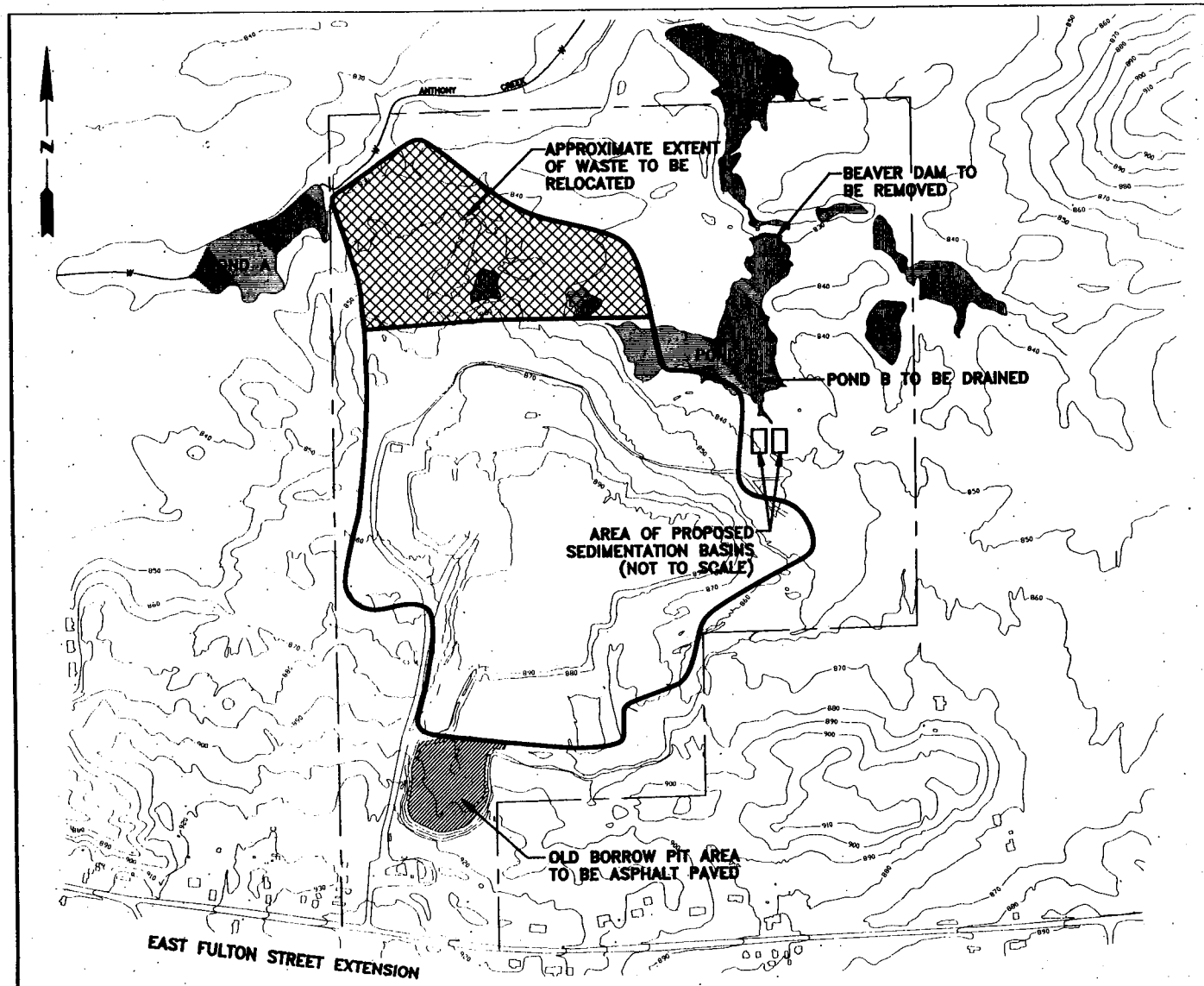
TIGHE & BOND
CONSULTING ENGINEERS, P.C.
WESTFIELD, MASSACHUSETTS

SITE PLAN

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
GLOVERSVILLE MUNICIPAL LANDFILL
GLOVERSVILLE, NEW YORK

DATE: NOV., 1992
SCALE: 1" = 400'
FIGURE: 2

EG191\F11A



LEGEND

——— — ——— *PROPERTY LINE*

LIMIT OF DEBRIS

NYSDEC SITE NO: 518001

DRAWN BY: KJK	CHECKED BY: ESH,TMB	APPROVED BY: MRP

NO.	DATE	REVISIONS	BY
1	4/93	CORRECT DEBRIS LINE, ADD AREA TO BE RELOCATED	TMB

TIGHE & BOND
CONSULTING ENGINEERS, P.C.
WESTFIELD, MASSACHUSETTS

PROPOSED SITE MODIFICATIONS

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
GLOVERSVILLE MUNICIPAL LANDFILL
GLOVERSVILLE, NEW YORK

DATE: NOV., 1992

SCALE: 1" = 400'

FIGURE: 3

E:\0191\F118

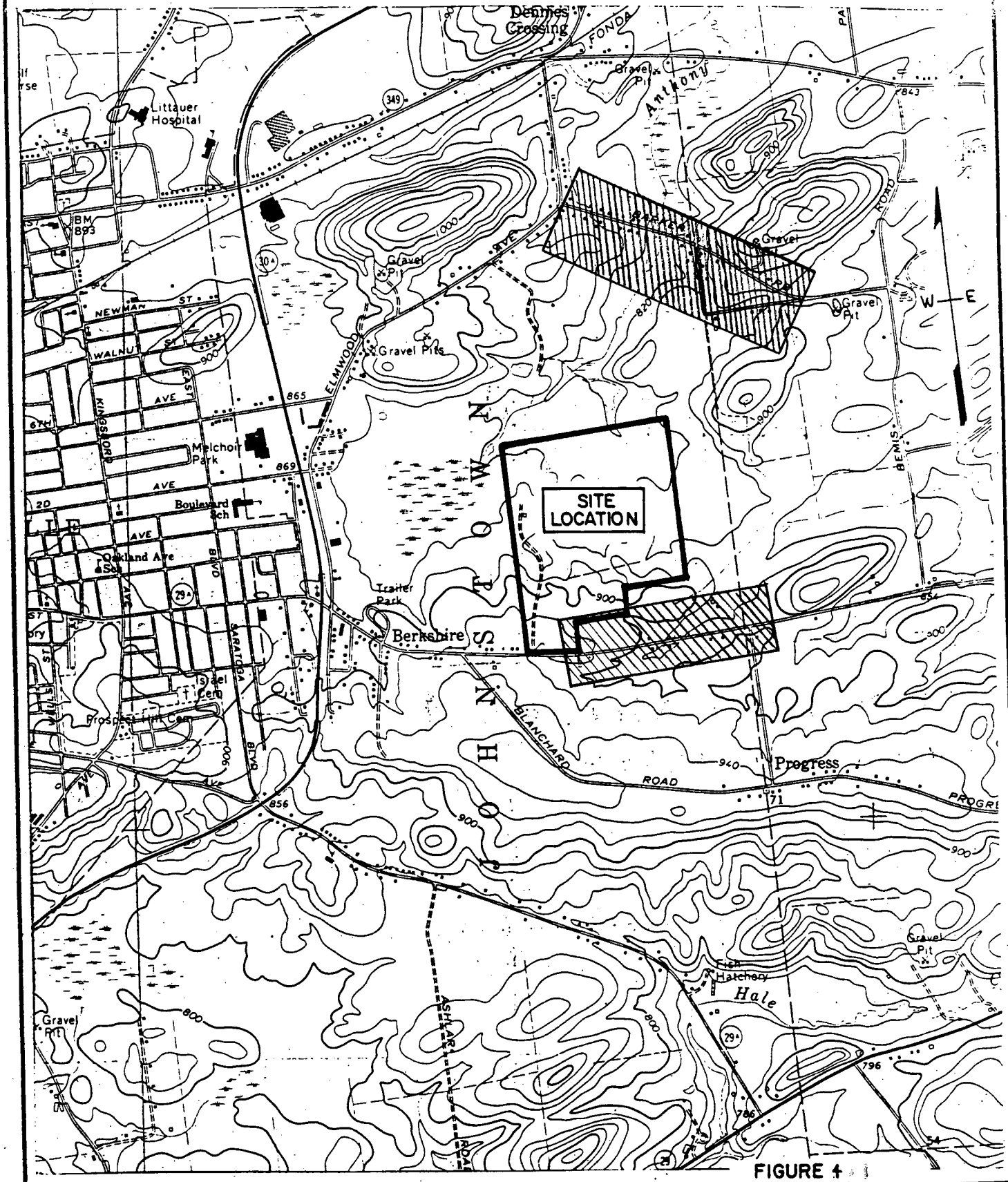


FIGURE 1

SOURCE NO. USGS GLOVERSVILLE QUADRANGLE

AFFECTED WELL AREA

NYSDEC SITE NO: 518001

AFFECTED PRIVATE WELLS

MUNICIPAL SANITARY LANDFILL
GLOVERSVILLE, N.Y.

TIGHE & BOND INC. CONSULTING ENGINEERS
WESTFIELD, MASS.

SCALE: 1"= 2000' DATE: OCT. 1992