Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

William Benson Landfill Site
Livonia (T) Livingston County
Site Number 8-26-007

March 2000

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

DECLARATION STATEMENT - RECORD OF DECISION

William Benson Landfill Inactive Hazardous Waste Site
Livonia (T), Livingston County, New York
Site No. 8-26-007

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the William Benson Landfill 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 William Benson Landfill 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 William Benson Landfill Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected construction of a modified 6 NYCRR Part 360 cover system. The components of the remedy are as follows:
system

- A 6-inch sand venting layer
- A 40-millimeter-thick geosynthetic liner or membrane
- A geosynthetic drainage layer consisting of geonet sandwiched between two layers of geotextile
- An18-inch barrier protection layer
- A 6-inch topsoil layer
- Long-term monitoring plan.

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.

3/16/00
Date

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

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RECORD OF DECISION

William Benson Landfill Site
Livonia (T), Livingston County
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SECTION 1: SUMMARY AND PURPOSE OF THE PROPOSED PLAN

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health (NYSDOH) 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 William Benson Landfill. As more fully described in Sections 3 and 4 of this document, landfill operations have resulted in the disposal of a number of hazardous wastes at the site, including organic peroxide and a characteristically reactive waste, consisting of a mixture of several different classes of compounds. 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 dermal exposure to leachate outbreaks on the surface of the landfill.
- a significant environmental threat associated with the impacts of contaminants to wildlife from contact with and ingestion of, leachate from the landfill.
- groundwater has been impacted with contamination above the State's Standards, Criteria, and Guidance values (SCGs).

In order to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous waste disposed at the site has caused, the following remedy was selected:

- Construction of a modified 6 NYCRR Part 360 cover system
  - A layer of general fill material overlaying the existing soil layer about the refuse.
  - A 6-inch sand venting layer
  - A 40-millimeter-thick geosynthetic liner or membrane
  - A geosynthetic drainage layer consisting of geonet sandwiched between two layers of geotextile
  - An18-inch barrier protection layer

- A 6-inch topsoil layer
- Long-term monitoring plan.

The selected remedy, discussed in detail in Section 8 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 SCGs.

SECTION 2: SITE LOCATION AND DESCRIPTION

The William Benson Landfill is a 13-acre inactive sanitary landfill which received hazardous waste. The landfill is located on Richmond Mills Road in the Town of Livonia, New York (see Fig. 1). The site is located near the top of a knoll in a rural setting in Livingston County. There is a small farm pond located several hundred feet upgradient of the site and a seasonal stream passes within 100 feet of the site. The nearest downgradient resident is located approximately 2,000 feet north-northwest of the site.

The landfill was never properly closed as a sanitary landfill. The existing soil cover allows significant infiltration, resulting in innumerable leachate seeps as is evidenced by surface staining and ponding of leachate. Leachate is water that has become contaminated through contact with waste. The shallow depth of the soil cover and the relatively permeable nature of the cover material are unacceptable for a proper landfill closure. In addition, there are no vents for the landfill gas, which currently bubbles up in the ponded leachate or filters through the soil cover in other areas of the landfill.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

As early as 1975, and throughout its operation, the William Benson Landfill had been cited for several Part 360 solid waste disposal permit violations. As previously noted the landfill operator never obtained the required Part 360 permit to operate a sanitary landfill. The landfill operator also never properly closed the landfill according to Part 360 regulations. Landfill activity is reported to have ceased by 1984.

The Phase I Report for this site and the 1985 "Community Right-to-Know" surveys produced by the NYSDEC indicate that Pennwalt Corporation (Lucidol Division) disposed of approximately 40 tons of halogenated aliphatics, halogenated aromatics, plasticizers, esters, ethers, alcohols, and inorganic salts (D003 waste) at the site, from approximately 1970-78. A D003 waste is termed a characteristically reactive hazardous waste, which means the waste is strongly, chemically reactive under commonly encountered conditions. It was also reported that the Pennwalt Corporation disposed an unknown quantity of organic peroxide at the landfill, prior to 1981. Pennwalt Corporation became Elf Atochem North America, Inc. on or about 1990.

Other entities are known to have disposed of waste, some of which is believed to have contained hazardous substances. These entities are identified in Section 5.0.

3.2: Remedial History

March 1979 — An Order and Judgement was signed ordering Mr. Benson to comply with 6NYCRR Part 360 Regulations. Compliance was never attained.

Dec. 1983 — The site was included on the Registry of Inactive Hazardous Waste Disposal Sites as a '2a' site, which is a temporary classification assigned to sites that have inadequate and/or insufficient data for inclusion in any of the other classifications.

1983-91 — Several sampling events of the monitoring wells and the various leachate outbreaks.

1986-97 — Sampling of private wells at various times and intervals.

Dec. 1990 — The site was reclassified on the Registry of Inactive Hazardous Waste Disposal Sites to a 'Class 2' site, which meant the site posed a significant threat to the public health or the environment and action was required.

Oct. 1995 — The RI/FS Work Plan is finalized and distributed.

March 1997 — After much negotiation, an access agreement to allow implementation of the RI/FS work plan was signed by all participating parties.

May 1997 — Elf Atochem and Champion proposed modifications to the approved work plan. A phased approach for implementing the RI was accepted.

Fall 1998 — The Preliminary Site Characterization Report was approved.

May 1999 — The Final RI Report was approved.

Nov. 1999 — The Feasibility Study (FS) Report was approved .

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, Elf Atochem and Champion have recently conducted and jointly funded 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 June 1997 and August 1997. The second phase was conducted between October 1997 and April 1998. Two reports entitled "William Benson Landfill RI/FS Preliminary Site Characterization Report" and "Remedial Investigation Report for the William Benson Landfill" have been prepared which describe the field activities and findings of the RI in detail.

The RI included the following actions:

- An electromagnetic (EM) geophysical survey was conducted to determine the approximate lateral extent of buried waste and identify potential buried drums;
- A soil gas survey was conducted to identify potential source areas and potential routes of migration of contaminants in the landfill mass and in the groundwater;
- Water samples were collected outside the footprint of the landfill by a trailer mounted push probe rig;
- Temporary piezometers were installed to characterize groundwater flow directions at the site and to aid in the selection of locations for permanent installation of monitoring wells;
- Shallow and deep monitoring wells were installed for analysis of soils and groundwater as well as physical properties of soil and hydrogeologic conditions;
- Surface soil samples were taken from areas visibly stained from previous leachate outbreaks;
- Evaluation of existing condition of the landfill soil cover;
- Surface and subsurface soil sampling from thirteen borehole locations; and
- A Fish and Wildlife Impact Analysis was performed according to the guidelines outlined in the NYSDEC Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites dated October 1994.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data was compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the William Benson Landfill site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of the NYS 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 for certain classes of compounds. 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 areas and media of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb) or parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1 Site Geology and Hydrogeology:

The uppermost (closest to the surface) soil unit is characterized as a reworked glacial till. This glacial till unit consists of tightly packed sand and silt, interspersed with varying percentages of fine to coarse sub-rounded gravel and occasional cobbles. The reworked glacial till unit ranges from 10- 16 feet in thickness.

This first soil unit displayed low hydraulic conductivity, is a measure of a soil's ability to transmit water through it. One method used to estimate the hydraulic conductivity of an aquifer is a slug test. Slug tests conducted in the wells screened in the first soil unit confirmed low hydraulic conductivity values ranging from 10^{-5} to 10^{-4} centimeter/second (cm/s). Although the hydraulic gradient suggests contaminated groundwater will move downward through this layer and laterally, it will do so slowly, at an estimated rate of 6.5 feet/year.

The second soil unit is characterized as an unworked till, meaning that it is similar in origin and composition, but has been unaltered by weathering processes and therefore is more tightly packed than the unit above. The slug tests performed in the wells screened in this second unit produced lower hydraulic conductivity values, predominantly in the 10^{-6} cm/s range. This suggests that this second layer would tend to retard downward migration of contaminants. The glacial till unit is from 7-14 feet thick.

A third unit was encountered at one of the wells. This third layer is identified as a glaciolacustrine deposit consisting of clay and silt. This layer is identified by an increase in the silt-clay component and a decrease in how tightly packed the soils are. The increase in the silt-clay component tends to significantly decrease the soil layer's hydraulic conductivity. The low hydraulic conductivity of this third layer is confirmed by the slug test performed on the monitoring well screened in this aquifer. The value for the hydraulic conductivity for this well (10^{-7} cm/s) is the lowest obtained for the site.

Originally it was thought that bedrock was about 14 feet below ground surface (bgs) at some locations at the site, based on auger refusal in two of the initial borings performed in April1981. Since subsequent borings in close proximity to these original borings did not meet refusal, but proceeded at least 10-20 feet deeper, it is assumed that the auger refusals were due to boulders and that the top of bedrock was not encountered.

Based on subsequent soil boring data, it is known that the depth to bedrock is at least 26 to 36 feet bgs. Because the second soil layer has very low hydraulic conductivity, it is not likely that contamination would travel through the second layer to the bedrock. It was therefore determined that borings to establish the actual depth to bedrock at this site were not required.

4.1.2 Nature of Contamination:

As described in the RI Report, soil, groundwater, leachate, surface water, and sediment samples were collected at the Site to characterize the nature and extent of contamination. The categories of contaminants which exceed their SCGs are inorganics (metals), volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and pesticides.

The inorganic contaminants which exceed their SCGs are aluminum, antimony, arsenic, barium, cadmium, iron, lead, magnesium, manganese, sodium, selenium, and zinc. The VOC contaminants which exceed their SCGs are benzene, toluene, ethylbenzene, xylenes (BTEX), acetone, chloroethane, 1,1-dichloroethane, methyl-ethyl-ketone (MEK). The pesticide contaminants which exceed SCGs are heptachlor, aldrin, 4,4'-DDE, endrin, dieldrin, and 4,4'-DDD.

The inorganic and VOC contaminants are indicative of contaminants that would typically be found in the leachate of a landfill. These landfill derived contaminants have also been detected in areas outside the footprint of the landfill at this site, thus indicating that contaminants from the site have been released to the environment and that the site is in need of remediation.

The pesticide contaminants are consistent with the levels that would be found in an agricultural setting and, as will be indicated later on, are not considered to be contaminants of concern for this site.

4.1.3 Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in groundwater and compares the data with the SCGs for the Site. Tables 2 and 3 do the same for leachate and soils, respectively. If a compound or metal is not included in a table, it means that that compound or metal was not found above SCGs in that media. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

Surface soil samples were collected from areas of leachate-stained surface soil from within the footprint of the landfill. Because there were no leachate stained soils outside the footprint of the landfill, no surface soil samples were taken outside of the landfill footprint. At the six leachate-stained surface soil locations, SCGs for inorganic compounds were exceeded five times for zinc (max. conc. 102 ppm), and four times for cadmium (max. conc. 2.6 ppm). These contaminants are typically found in the leachate of landfills.

In addition, sixteen subsurface soil boring samples taken were collected, all from locations outside the footprint of the landfill. All of the subsurface soil samples, except one, were collected from within the first 12 feet below ground surface (bgs). The one deeper sample taken was from the 32 to 34 foot interval bgs.

At these sixteen locations, SCGs for inorganic compounds were exceeded four times for zinc (max. conc. 110 ppm), three times for magnesium (max. conc. 42,400 ppm), twice for cadmium

(max. conc. 1.6 ppm), and once for selenium (max. conc. 4.6 ppm). Again, these analytes are indicative of landfill leachate. The SCG for zinc was also exceeded at a background location. The concentration for zinc at this background location was 66 ppm. The eastern USA background values range from 9-50 ppm which would indicate that even the background values for zinc at this site slightly exceeded the typical background levels for the eastern USA. This would indicate that not all of the zinc above the SCG at non-background locations would be due to migration from the landfill, but some fraction could be due to natural conditions.

Table 1
Nature and Extent of Contamination in Soils

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCGs	SCG (ppm)
Subsurface Soils	Inorganics	Cadmium	0.270 to 1.6	2 of 16	0.1-1
		Magnesium	1,330 to 42,400	3 of 16	17,800
		Selenium	ND (0.93) to 4.600	1 of 16	.01-3.9
		Zinc	30.3 to 110	4 of 16	9-50
Leachate-Stained Surface Soils	Inorganics	Cadmium	.910 to 2.6	4 of 6	0.1-1
		Zinc	46.2 to 102	5 of 6	9-50

Leachate

The leachate samples were collected from the same locations as the leachate-stained surface soil samples were taken. There was no evidence of leachate staining outside the footprint of the landfill. Neither was there any visual evidence of surface migration of leachate beyond the footprint of the landfill. In the samples which were taken, the contaminants identified were VOCs and inorganic compounds.

At the seven leachate sample locations, SCGs for VOCs were exceeded once by benzene (max. conc. 22 ppb), toluene (max. conc. 15 ppb), and chlorobenzene (max. conc. 19 ppb). VOC SCGs were exceeded three times for total xylenes (max. conc. 69 ppb) and for ethylbenzene (max. conc. 38 ppb). The SCG for each of these compounds is 5 ppb with the exception of benzene for which it is 0.7 ppb and acetone which is 50 ppb.

The SCGs for inorganic compounds at these six leachate sample locations were exceeded six times for iron (max. conc. 62,600 ppb), manganese (max. conc. 2,400 ppb), and sodium (max. conc. 609,000 ppb). They were exceeded five times for antimony (max. conc. 10.4 ppb) and magnesium (max. conc. 111,000 ppb). They were exceeded once by arsenic (max. conc. 274 ppb) and lead (max. conc. 30.2 ppb). These results are presented in Table 2.

Table 2
Nature and Extent of Contamination in Leachate

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs	SCG (ppb)
Leachate	Volatile Organic Compounds (VOCs)	Chloroethane	ND(10) to 5	1 of 7	5
		Acetone	ND(10) to 350	1 of 7	50
		Benzene	ND(10) to 22	1 of 7	0.7
		Toluene	ND(10) to 15	1 of 7	5
		Chlorobenzene	ND(10) to 19	1 of 7	5
		Ethylbenzene	ND(10) to 38	3 of 7	5
		Total Xylenes	ND(10) to 69	3 of 7	5
	Inorganics	Antimony	ND(4.9) to 10.4	5 of 7	3
		Arsenic	ND(2.6) to 274	1 of 7	25
		Iron	4,150 to 105,000	7 of 7	300
		Lead	ND(2.3) to 30.2	1 of 7	25
		Magnesium	31,400 to 111,000	5 of 7	35,000
		Manganese	83.2 to 2,400	6 of 7	300
		Sodium	55,600 to 609,000	7 of 7	20,000
	Pesticides	Aldrin	ND(0.05) to .04	1 of 6	ND(0.02)

Soil Gas

During the preliminary site characterization, a soil gas survey was implemented to evaluate the extent of contaminant migration in the groundwater. While most of the soil gas samples were taken within the landfill material, some from along the perimeter were not within the actual footprint of the landfill. A s0oil gas survey extracts small amounts of gas from the voids in the waste mass or soils. In this case, the samples were taken from approximately 3.5 to 4 feet below ground surface. These soil gas samples were then analyzed with an on-site mobile laboratory for VOC contaminants. The total number of samples collected and analyzed was 91.

The number in the parentheses after each compound indicates the number of times the following compounds were detected: ethylbenzene (32), hydrogen sulfide (32), xylenes (31), methane (31), acetone (29), toluene (22), chloromethane (22), benzene (21), chloroethane (20), chlorobenzene (20), methyl-ethyl-ketone (MEK) (10), methyl isobutyl ketone (MIBK) (4), methlylene chloride (4), vinyl chloride (3), cis-1,2 dichloroethene (1), and trichloroethane (1).

Groundwater

Twenty-nine groundwater samples were collected from the 15 monitoring wells which were installed at the site. An additional 21 samples were taken from push probe locations during the preliminary site characterization. These 21 samples were only sampled for VOCs. A push probe is a narrow, hollow metal tube pressed into the ground to various depths to collect groundwater and/or soil samples. At this site, the push probe sampling was only for groundwater.

The principal contaminants of concern in the groundwater are VOCs and inorganic analytes. Twenty-nine groundwater samples were analyzed for total metals. Of the samples collected SCGs were exceeded: 24 times for iron (max. conc. 14,100 ppb); 13 times for sodium (max. conc. 455,000 ppb); 11 times for antimony (max. conc. 10.3 ppb) and magnesium (max. conc. 82,100 ppb); while for arsenic (max. conc. 69.8 ppb) and barium (max. conc. 1,400) they were exceeded only once. These contaminants are typically found in the leachate from landfills.

The one exceedence each for arsenic and barium were both identified in the same well. This well is located immediately downgradient of the landfill and has historically been the most heavily contaminated well on site. The levels of monitored contaminants in this well have dropped significantly over time. The next downgradient well does not contain either arsenic or barium above the SCGs.

Fifty groundwater samples were analyzed for VOCs. The VOC SCGs were exceeded: 6 times for acetone (max. conc. 100 ppb); 3 times for chloroethane (max. conc. 2,900 ppb) and toluene (max. conc. 39); twice for MEK (max. conc. 310 ppb) and once for 1,1-dichloroethane (max. conc. 14 ppb), chlorobenzene (max. conc. 20 ppb), ethylbenzene (max. conc. 72 ppb), m,p-xylene (max. conc. 120 ppb), and o-xylene (max. conc. 34 ppb). These contaminants appear to be leachate derived. In all instances, the highest concentrations of contaminants were in locations in close proximity to the landfill. In all instances, as the sample locations move further away from the landfill, concentration levels at those locations decrease significantly within fairly short distances away from the landfill perimeter.

Surface Water

One surface water sample was taken from the bed of an intermittent stream located approximately 100 feet from and parallel to the northern boundary of the landfill. Aluminum was the only inorganic analyte which exceeded SCGs. Aluminum (max. conc. 480 ppb) is a naturally occurring element of soils in this area and is not considered to be a contaminant of concern.

Seven pesticides/herbicides were also detected in the sample above SCGs for Class C surface water quality standards. They were heptachlor (max. conc. 0.017 ppb), heptachlor epoxide (max. conc. 0.019 ppb), 4,4'-DDE (max. conc. 0.020), endrin (max. conc. 0.025 ppb), endosulfan I (max. conc. 0.010 ppb), alpha-chlordane (max. conc. 0.032 ppb), and methoxychlor (max. conc. 0.043 ppb). These levels are very low and are consistent with what would be expected in an agricultural area. Therefore these pesticides/herbicides are not considered to be contaminants of concern.

Sediments

One sediment sample was taken from the same intermittent stream as above. No analytes exceeded SCGs.

Table 3
Nature and Extent of Contamination
Groundwater

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs	SCG (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Acetone	ND (10) to 100	6 of 50	50
		Chloroethane	ND(10) to 2900	3 of 50	5
		1,1-Dichloroethane	ND (10) to 14	1 of 50	5
		MEK	ND (10) to 310	2 of 50	50
		Toluene	ND (10) to 39	3 of 50	5
		Chlorobenzene	ND (10) to 20	1 of 50	5
		Ethylbenzene	ND (10) to 72	1 of 50	5
		m,p-Xylene	ND (0.2) to 120	1 of 50	5
		o-Xylene	ND (0.2) to 34	1 of 50	5
	Inorganics	Antimony	ND (5.3) to 10.3	11 of 29	3
		Arsenic	ND (2.6) to 69.8	1 of 29	25
		Barium	27.4 to 1,400	1 of 29	1,000
		Iron	147 to 14,100	24 of 29	300
		Magnesium	12,900 to 82,100	11 of 29	35,000
		Manganese	23.4 to 541	2 of 29	300
		Sodium	4,640 to 455,000	13 of 29	20,000
	Pesticides	Heptachlor	ND(0.05) to .079	4 of 29	0.04
		Aldrin	ND(0.05) to .024	2 of 29	ND(0.02)
		Endrin	ND(0.05) to .15	3 of 29	ND(0.02)
		Dieldrin	ND(0.05) to .078	5 of 29	0.004

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. A more detailed discussion of the health risks can be found in Section 10.0 Human Health Risk Assessment of the RI Report.

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

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

- ingestion and dermal contact with leachate outbreaks within the landfill footprint
- dermal contact with or ingestion of contaminated groundwater during any trenching or excavation activities near the footprint of the landfill.

4.3 Summary of Environmental Exposure Pathways:

This section summarizes the types of environmental exposures and/or ecological risks which may be presented by the site. The Fish and Wildlife Impact Assessment included in the RI (Section 11.0 Fish and Wildlife Impact Analysis) presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The following pathway for environmental exposures and/or ecological risks has been identified:

- ingestion and/or dermal exposure by wildlife which may come in contact with leachate outbreaks at the site.

Samples from an intermittent creek receiving drainage from the site has not identified elevated levels of site contaminants, therefore remediation in the creek will not be necessary.

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 PRPs for the site, documented to date, include: Elf Atochem North America, Champion Products, Inc., Agway, Niagara Mohawk, 3M, NYS Department of Transportation (NYSDOT), SUNY Geneseo, and William and Jean Benson.

The NYSDEC entered into a Consent Order on October 1995, with Elf Atochem and Champion Products, Inc The Order obligates the responsible parties to implement a RI/FS only remedial program. Upon issuance of th Record of Decision the NYSDEC will approach the PRPs to implement the selected remedy under another Orde on Consent.

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 of the program is to meet all Standards, Criteria and Guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected should eliminate or mitigate all significant threats to 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, ingestion of contaminated groundwater and leachate affected by the site that does not attain NYSDEC Class GA Ambient Water Quality Criteria
- Eliminate, to the extent practicable, dermal contact with contaminated groundwater and landfill leachate
- Eliminate, to the extent practicable, off-site migration of groundwater that does not attain NYSDEC Class GA Ambient Water Quality Criteria
- Eliminate, to the extent practicable, the generation of leachate resulting from the infiltration of precipitation
- Eliminate, to the extent practicable, the exposure of fish and wildlife to leachate containing levels of VOCs and inorganic analytes above SCGs.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the William Benson Landfill site were identified, screened and evaluated in the report entitled Focused Feasibility Study William Benson Landfill (Revised November 1999).

A presumptive remedy approach for landfill closure was used in developing the alternatives for detailed analysis. Though historical sampling of the groundwater had indicated significant contamination in one area downgradient of the landfill, more recent sampling indicates that current releases to groundwater have noticeably decreased. The once, more-heavily contaminated well now has significantly lower levels of contamination. The newly installed well further downgradient from this well has only low levels of contamination present in it. Therefore a separate groundwater remedy is not required.

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 Alternatives

The potential remedies are intended to address closure of the landfill and are intended to address the generation of leachate at the site. By addressing this, further impacts to the groundwater should be minimized.

Alternative 1: No Action

Present Worth:	$817,000
Capital Cost:	$60,000
Annual O&M:	$55,000
Time to Implement	2 months

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. A chain-link fence would be constructed around the site. Some additional monitoring wells may need to be installed. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 2: Excavation and Off-Site Disposal

Present Worth:	$16,831,000
Capital Cost:	$16,601,000
Annual O&M:	$55,000
Time to Implement	6 months

This alternative would include the removal of the existing clean soil cover system; excavation, screening and off-site disposal of landfill contents (estimated at 215,000 cubic yards); final grading; and re-vegetation of the former landfill area. It is anticipated that a significant portion of the landfill contents would be disposed of as municipal waste, with a smaller fraction of the landfill materials requiring disposal as hazardous waste.

Subsequent to the completion of the work under this alternative, the landfill would be considered to be "clear closed", and no post-closure care would be required. Groundwater monitoring would be performed for ar estimated duration of five years under this scenario to confirm that impacts to site groundwater have beer mitigated.

Alternative 3: Construction of a 6NYCRR Part 360 Cover System

Present Worth:	$2,833,00(
Capital Cost:	$2,245,00(
Annual O&M:	$61,680 (then $25,680
Time to Implement	6 month

Work under this remedial alternative would include grading and/or selective excavation of the existing clean so cover system and landfill contents; and the construction of a geosynthetic cover system, or its equivalent,

compliance with applicable requirements of Title 6 NYCRR Part 360. The cover system installed under this alternative would include:

- A layer of general fill material overlaying the existing cover system. The general fill layer may vary in thickness dependent upon existing site conditions, and would be used to fill voids or depressions in the existing cover system and to provide a suitable base for compacting.

- A 12-inch sand venting/drainage layer to allow landfill gases to vent from beneath the synthetic liner. The sand layer would be connected to multiple passive gas vents to prevent the build-up of landfill gases. The passive vents would be installed at a frequency of at least one per acre.

- A 40-millimeter-thick geosynthetic liner or membrane to prevent the migration of surface water through the cover system.

- A geosynthetic drainage layer consisting of a geonet sandwiched between two layers of geotextile. The geosynthetic layer would direct the water which permeates the lower protection layer to the drainage swales.

- An 24-inch thick soil barrier protection layer to prevent damage to the synthetic liner.

- A 6-inch topsoil layer to support a vegetative landfill cover.

During the construction of the cap, any materials used for contouring would first be obtained from the first 6-12 inches of soil from the areas immediately surrounding the foot print of the landfill. By doing this, any surface soils potentially impacted by leachate or surface water runoff from the landfill would be moved to an area within the remedy.

During the design phase, a hydraulic analysis will be performed to evaluate the potential adverse impacts to the groundwater or to the stability of the engineered cap due to the movement of groundwater from the west and north of the site into the capped area and from the release of perched contaminated water (leachate) from the waste mass after capping. If the analysis shows a potential for the leachate levels to disrupt the integrity of the engineered cap or to adversely impact the groundwater, appropriate mitigative measures will be considered. The mitigative measures to be considered would include, but not be limited to:

- a toe drain installed at the eastern base of the landfill to relieve the hydraulic pressure under the cover system and

- a hydraulic barrier or diversion at the upgradient side of the landfill.

Part of the operation and maintenance inspection schedule would be to confirm that there are no adverse hydraulic impacts to the stability of the cover system..

The site operation and maintenance (O & M) plan would include:

- A sampling and analysis schedule for peripheral groundwater monitoring. After the first five years, a reduced monitoring schedule could be proposed. The two costs under Annual O&M reflects this possibility.

- An inspection and maintenance schedule for the landfill cover system.

- Identification of an appropriate mechanism to assure adequate financial resources to implement the site's O & M plan.

This alternative would also include a post-closure analysis of the passive venting off-gases to determine whether or not there would be a need to treat the gases before they are released to the environment. The small size of the landfill and its age indicate that passive venting of off-gases would be reasonable.

Alternative 4: Construction of a Modified 6NYCRR Part 360 Cover System

Present Worth:	$2,382,000
Capital Cost:	$1,794,000
Annual O&M:	$61,680 (then $25,680)
Time to Implement	6 months

This alternative would include all the elements of Alternative #3 except that the 24-inch barrier protection layer would be reduced to 18 inches and the 12-inch sand-venting/drainage layer would be reduced to 6 inches.

During the construction of the cap, any materials used for contouring would first be obtained from the first 6-12 inches of soil from the areas immediately surrounding the foot print of the landfill. By doing this, any surface soils potentially impacted by leachate or surface water runoff from the landfill would be moved to an area within the remedy.

During the design phase, a hydraulic analysis will be performed to evaluate the potential adverse impacts to the groundwater or to the stability of the engineered cap due to the movement of groundwater from the west and north of the site into the capped area and from the release of perched contaminated water (leachate) from the waste mass after capping. If the analysis shows a potential for the leachate levels to disrupt the integrity of the engineered cap or to adversely impact the groundwater, appropriate mitigative measures will be considered. The mitigative measures to be considered would include, but not be limited to:

- a toe drain which would be installed at the eastern base of the landfill to relieve the hydraulic pressure under the cover system and

- a hydraulic barrier or diversion at the upgradient side of the landfill.

Part of the operation and maintenance inspection schedule of the liner would be to confirm that there are no adverse hydraulic impacts to the stability of the liner.

The site operation and maintenance (O & M) plan would include:

- A sampling and analysis schedule for peripheral groundwater monitoring. After the first five years, a reduced monitoring schedule could be proposed. The two costs under Annual O&M above reflect this possibility.

- An inspection and maintenance schedule for the landfill cover system.

- Identification of an appropriate mechanism to assure adequate financial resources to implement the site's O & M plan.

This alternative would also include a post-closure analysis of the passive venting off-gases to determine whether or not there would be a need to treat the gases before they are released to the environment. The small size of the landfill and its age indicate that passive venting of off-gases would be reasonable.

Alternative 5: Construction of a Modified 6NYCRR Part 360 Cover System; with a Leachate Collection System; and a Vapor Treatment System

Present Worth:	$4,489,000
Capital Cost:	$3,055,000
Annual O&M:	$116,880 (then $73,680)
Time to Implement	6 months

This alternative would include all the elements of Alternative #4 plus the installation of a leachate collection system around the perimeter of the landfill and the installation of a system to treat the gases collected by the gas venting layer. These would be constructed according to applicable Part 360 requirements.

The goal of the leachate collection system would be to reduce the volume of contaminated residual water in the waste mass and to reduce the hydraulic head under the geosynthetic liner. The leachate collected would be either treated on site or disposed/treated off-site, possibly at the local Publically Owned Treatment Works (POTW), if the leachate can meet the criteria of that facility.

The leachate collection system and the gas collection treatment system would be added to the inspection and maintenance schedule.

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.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy would meet applicable environmental laws, regulations, standards, and guidance.

Alternative 1 would not meet SCGs for applicable 6 NYCRR Part 360 requirements for the proper closure of a landfill. Alternative 2 would be effective in meeting SCGs because the waste mass and contaminated soil would be removed from the site and disposed in a permitted solid or hazardous waste disposal/treatment facility.

Alternatives 3, 4 and 5 would all comply with Part 360 requirements, although variances allowing the 18-inch barrier protection layer (as opposed to 24-inch Part 360 requirement) and the 6-inch sand venting/drainage layer (as a variance to the 12-inch Part 360 requirement) would be required. These variances are expected to perform adequately at this site.

Alternative 5 would be marginally more effective than Alternative 4 in meeting groundwater SCGs because it would decrease the rate of migration of leachate from the landfill waste mass.

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.

Alternative 1 would not address environmental and human exposure to periodic leachate outbreaks. Alternatives 3, 4, and 5 would be equally effective in decreasing potential environmental and human exposure to periodic leachate outbreaks on the surface of the landfill. Alternative 2 would be most effective because the potential for exposure would no longer be on-site.

Low-level contaminated groundwater is within four feet of the surface. None of the alternatives would address potential exposures to contaminated groundwater during any future excavation or trenching activities near the footprint of the landfill at the site. As long as a cover system is in place, it is expected that the low levels of contamination in the groundwater would attenuate over time. The low hydraulic conductivities of the native soils should limit the extent of contaminant migration laterally and vertically.

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

Alternative 2 would have the greatest potential for short-term impacts since invasive excavation activities would expose workers and the public to contaminants released to the air. Local traffic patterns may also be affected by the off-site transportation of waste. The potential for public exposure to waste due to a transportation accident would be increased, however adequate contingency plans and controls would be required during construction to mitigate these impacts.

Alternative 5 would have significantly fewer short-term impacts because the invasive activities would be limited to minimal consolidation of waste along the peripheral edges of the landfill and to the trenching required to install the leachate collection/treatment system.

Alternatives 3 and 4 would have fewer short-term adverse impacts than either alternatives 2 or 5 because the invasive activities would be limited to minimal consolidation of waste along the peripheral edges of the landfill.

Alternative 1 would have no short-term impacts because there would be no invasive activities within the footprint of the landfill.

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 2 would have the greatest degree of long-term effectiveness because all the waste mass and contaminated soils would be removed from the site.

Alternatives 3, 4 and 5 would all have a high degree of long-term effectiveness and permanence. Alternative 3 would include a thicker barrier protection layer and a thicker venting/drainage layer. Alternative 5 would include a leachate collection system and a gas collection system which would reduce the amount of contaminants released to the groundwater and air, respectively.

Neither of these enhancements would be expected to significantly increase long-term effectiveness. The gradients of the slopes on this landfill are expected to be low enough that the slope-stability of the barrier protection layer would not be significantly affected by the proposed decrease in thickness for the barrier protection layer. The concentrations of contaminants in the leachate are not expected to be very high. It is expected that the impacts to groundwater quality would be minimal and localized. Placing the synthetic liner cap over the waste would reduce the amount of leachate generated. Appropriate calculations to ensure hydraulic stability of the cap without the installation of a toe drain would be part of the design requirements.

Alternative 1 would have the least long-term effectiveness because nothing would be done to address the landfill.

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.

None of the alternatives would reduce either the toxicity or the volume of the actual wastes. Alternative 2 would however reduce the toxicity and volume of the waste at the site, by moving the contaminants to another site where they could be more effectively contained.

All of the alternatives except Alternative 1 would reduce the mobility of the contaminants in the waste mass. Alternative 2 would have the most reduction because the contaminants would be transferred to a disposal facility better designed to mitigate the migration of the contaminants. In Alternative 5, contaminants which might be released to the environment would be removed/destroyed through the leachate collection system or the off-gas treatment system, but this would not be expected to provide a significantly increased level of reduction in toxicity, mobility, or volume than would be expected for Alternatives 3 or 4. Alternative 1 would have no effect on the toxicity, mobility or volume of the waste mass.

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..

Alternative 2 would be the most difficult to implement. Excavating and transporting already deposited wastes would require numerous contingency plans to provide adequate and appropriate protections to human health and the environment.

Alternatives 3 and 5 would be somewhat more difficult than Alternative 4 because more activities and/or the relocation of greater volumes of materials are required. All three alternatives (3,4,&5), however could be readily implemented.

Alternative 1 would be the easiest to implement because there would be no action required.

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 4.

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

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 4, construction of a modified 6 NYCRR Part 360 cover system, as the remedy for this site.

This selection is based upon the evaluation of the five alternatives developed for this site. With the exception of the no action alternative, each of the alternatives would comply with the threshold criteria. Although Alternative 2 would be significantly more effective in achieving long-term benefits to human health and the environment, the cost is prohibitive and the implementability would be difficult. The remaining three alternatives (Alternatives 3,4, & 5) are similar with respect to the majority of the balancing criteria. The increased thicknesses of the barrier protection layer and sand venting/drainage layer in Alternative 3 is not expected to be necessary in the landfill cover system for this site. Preliminary determinations indicate that the leachate collections system and the off-gas treatment system from Alternative 5 would also not be needed. As a contingency, Alternative 4 will require relevant technical analysis and inspections during the design and O & M phases of the remedy. If subsequent analyses or inspections indicates that either a leachate collection system or an off-gas treatment system will be necessary, then each will be designed, constructed and maintained.

The estimated present worth cost to implement the remedy is $2,274,000 The cost to construct the remedy estimated to be $1,517,000 and the estimated average annual operation and maintenance cost for 30 years $61,680 (then $25,680).

The elements of the selected remedy are as follows:

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

2. Construction of a modified Part 360 cover system which will include the following or their equivalent:

   - A layer of general fill material overlaying the existing cover system. The general fill layer may vary in thickness dependent upon existing site conditions, and will be used to fill voids or depressions in the existing cover system and to provide a suitable base for compacting.

   - A 6-inch sand venting/drainage layer to allow landfill gases to vent from beneath the synthetic liner. The sand layer will be connected to multiple passive gas vents to prevent the build-up of landfill gases. The passive vents will be installed at a frequency of at least one per acre.

   - A 40-millimeter-thick geosynthetic liner or membrane to prevent the migration of surface water through the cover system.

   - A geosynthetic drainage layer consisting of a geonet sandwiched between two layers of geotextile. The geosynthetic layer will direct water which permeates the lower protection layer to the drainage swales.

   - An 18-inch thick soil barrier protection layer to prevent damage to the synthetic liner.

   - A 6-inch topsoil layer to support a vegetative landfill cover.

3. During the construction of the cap, any materials used for contouring will first be obtained from the first 6-12 inches of soil from the areas immediately surrounding the foot print of the landfill. By doing this, any surface soils potentially impacted by leachate or surface water runoff from the landfill will be moved to an area within the remedy.

   During the design phase, a hydraulic analysis will be performed to evaluate the potential adverse impacts to the groundwater or to the stability of the engineered cap due to the movement of groundwater from the west and north of the site into the capped area and from the release of perched contaminated water (leachate) from the waste mass after capping. If the analysis shows a potential for the leachate levels to disrupt the integrity of the engineered cap or to adversely impact the groundwater, appropriate mitigative measures will be considered. The mitigative measures to be considered will include, but not be limited to:

   - a toe drain which will be installed at the eastern base of the landfill to relieve the hydraulic pressure under the cover system and

   - a hydraulic barrier or diversion at the upgradient side of the landfill.

4. Since the remedy results in hazardous waste remaining at the site, a long-term monitoring program will be instituted. This program will allow the effectiveness of the remedy to be monitored and will be a component of the operation and maintenance for the site. The site operation and maintenance (O & M) will include:

   - A sampling and analysis schedule for peripheral groundwater monitoring.
   - An inspection and maintenance schedule for the landfill cover system.
   - Identification of an appropriate mechanism to assure adequate financial resources to implement the site O & M plan.

   This alternative will also include a post-closure analysis of the passive venting off-gases to determine whether or not there will be a need to treat the gases before they are released to the environment.

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 Citizen Participation Plan was developed for this site in October 1996.
- A fact sheet was sent to the site mailing list in June of 1997 notifying the public of the availability of the RI/FS Work Plan and discussing the investigation to be undertaken.
- In December of 1999 a fact sheet was sent to the mailing list notifying the public of the availability of the PRAP which would be discussed at the upcoming public meeting in December 1999.
- In December 1999, the PRAP was released for public review and comment.
- On December 13, 1999, a public meeting was held where the proposed remedial action plan and the supporting rationale were explained to those in attendance. Questions were received and responded to at the public meeting and in the attached Responsiveness Summary.
- 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.

Table 4
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth
No Action	$ 60,000	$ 55,000	$ 817,000
Excavation and Off-Site Disposal	$ 16,831,000	$ 55,000	$ 16,601,000
Construction of a 6NYCRR Part 360 Cover System	$2,245,000	$ 61,680 (then $25,680)	$ 2,883,000
Construction of a Modified 6 NYCRR Part 360 Cover System	$ 1,794,000	$ 61,680 (then $25,680)	$ 2,382,000
Construction of a Modified 6 NYCRR Part 360 Cover System; with a Leachate Collection System; and a Vapor Treatment System	$3,055,000	$ 116,880 (then $ 73,680)	$ 4,489,000

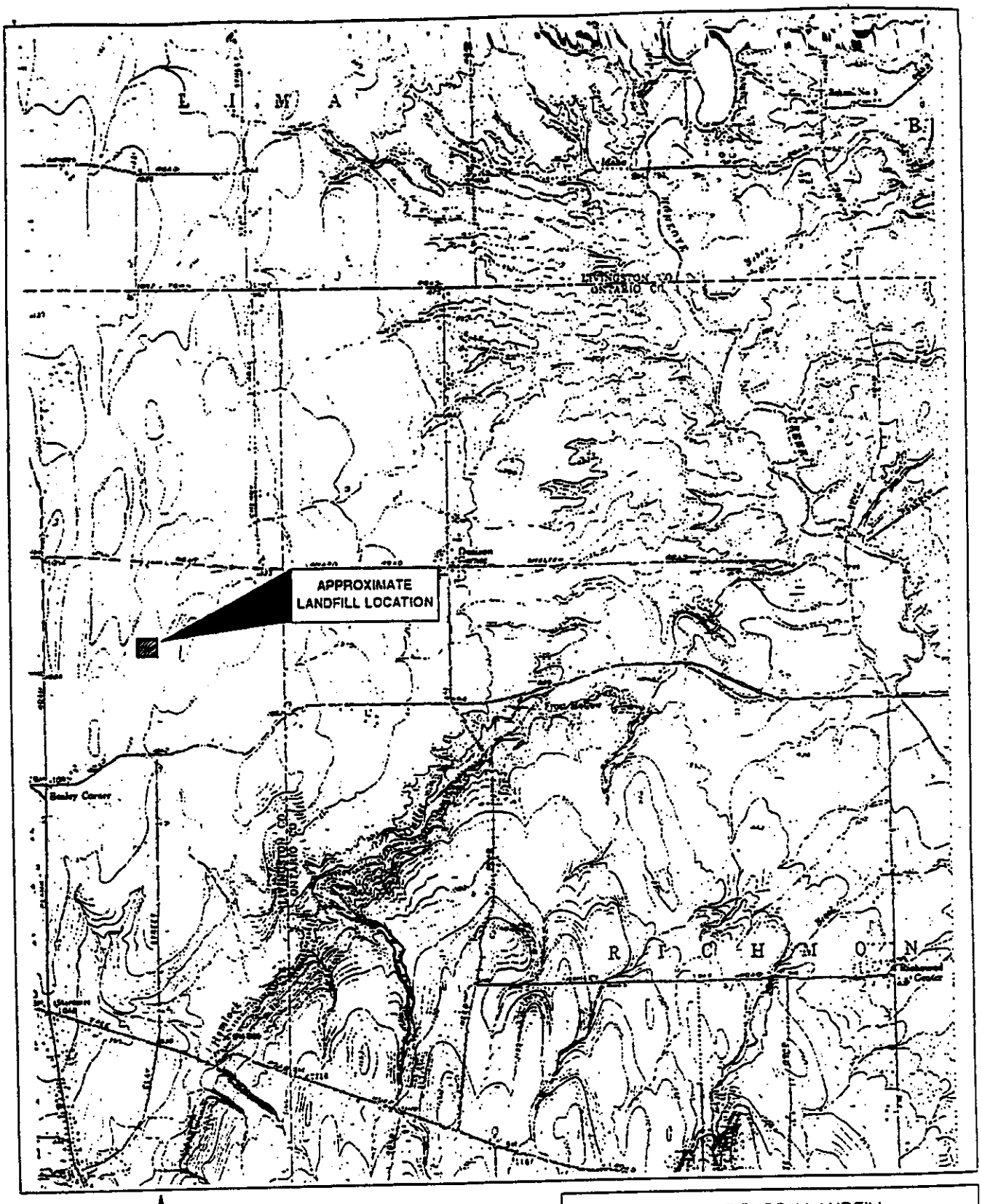

L I M A
B
LIVINGSTON CO.
ONTARIO CO.
APPROXIMATE
LANDFILL LOCATION
Bailey Corners
R I C H I O N
N
Scale: 1" = 3000'
MALCOLM
PIRNIE
WILLIAM BENSON LANDFILL -
LIVONIA, NEW YORK
VICINITY MAP
Honeoye, New York
U.S.G.S. 7.5' Quadrangle

Figure 2

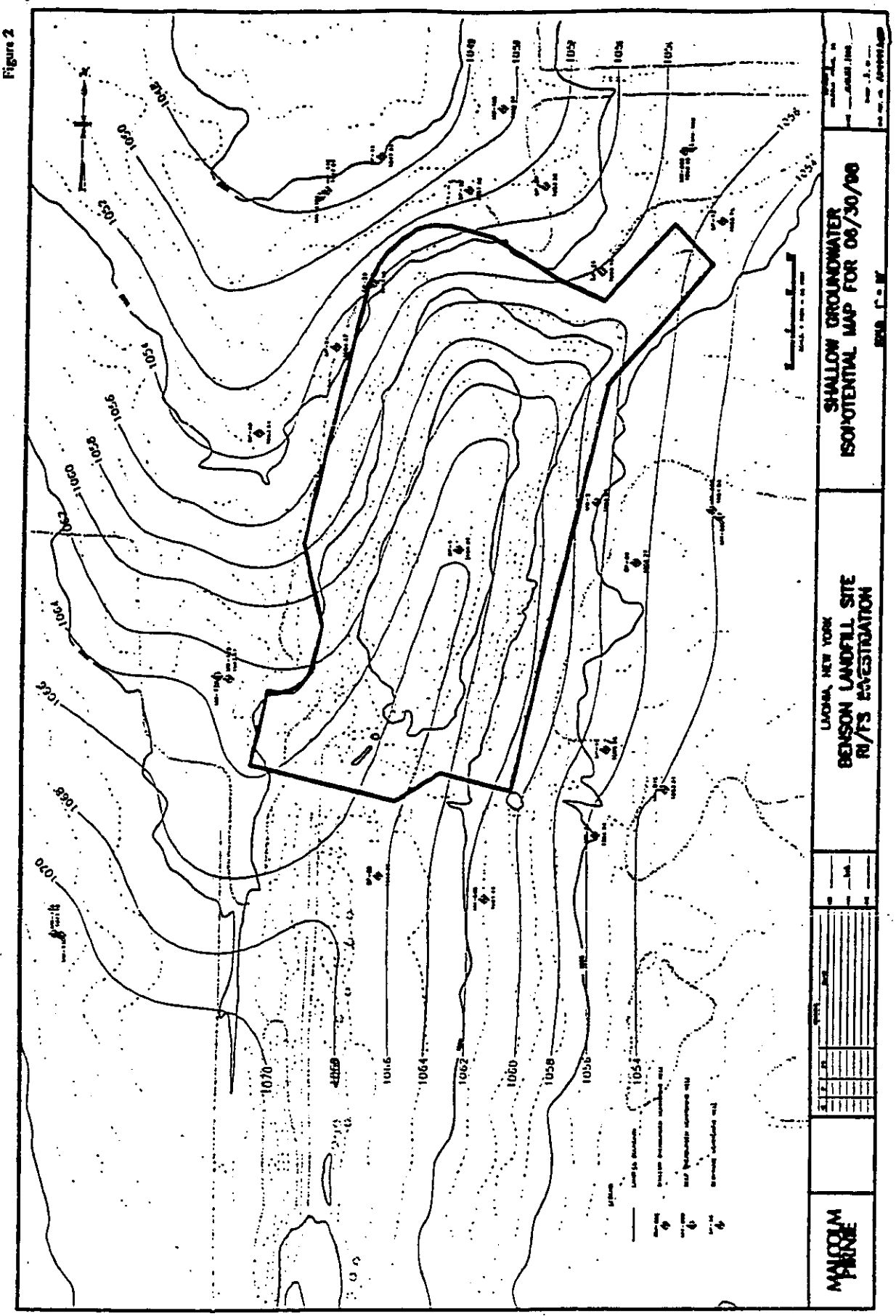
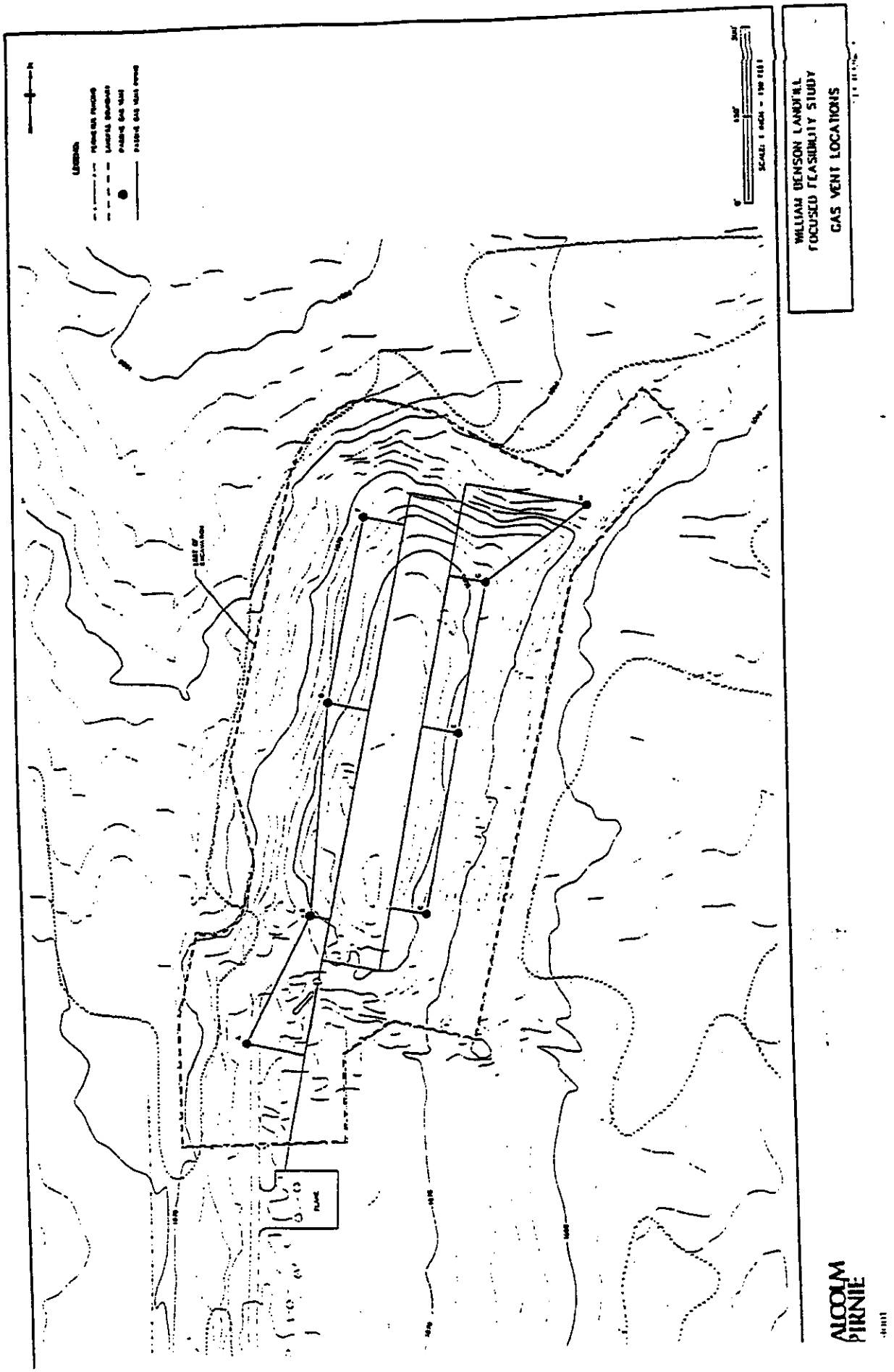

SHALLOW GROUNDWATER
ISOPOTENTIAL MAP FOR 06/30/98
LAONIA, NEW YORK
BENSON LANDFILL SITE
RI/FS INVESTIGATION
MALCOLM PIRNIE

FIGURE 3


WILLIAM BENSON LANDFILL
FOCUSED FEASIBILITY STUDY
GAS VENT LOCATIONS
LEGEND
PLUME
AECOM
PIRNIE

APPENDIX A

RESPONSIVENESS SUMMARY

William Benson Landfill
Proposed Remedial Action Plan
Livonia (T), Livingston County
Site No. 8-26-007

The Proposed Remedial Action Plan (PRAP) for the William Benson Landfill Site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on December 4, 1999. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the William Benson Landfill Site. The preferred remedy is modified Part 360 landfill cap.

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 December 13, 1999 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. Written comments were received from Champion Products, Inc. and Elf-Atochem North America, Inc. as well as a letter supporting the remedy from the town of Livonia.

The public comment period for the PRAP ended on January 10, 2000. This Responsiveness Summary responds to all questions and comments raised at the December 13, 2000 public meeting and to the written comments received. The following are the comments received at the public meeting, with the NYSDEC's responses:

> COMMENT 1: I'm a homeowner on Stone Hill Road. I'm concerned about the water in my well. My well has been tested before by the Health Department as part of the Benson Landfill effort. Can you explain what type of well monitoring has been done and what will continue in the future?
>
> RESPONSE 1: Several rounds of data from groundwater monitoring wells have been collected and analyzed. The analytical results from this sampling show that contamination is localized and close to the landfill. The monitoring wells which have been installed further out from the landfill have not shown contamination. Much further beyond those wells are residential wells that have been sampled

and have also not shown contamination. The monitoring wells which are located on the site will continue to be monitored after the construction of the remedy. These on-site wells will be used to monitor the quality of the groundwater between the landfill and residential wells have changed. Based on the results of the sampling over time, the need to increase or decrease the on-site sampling frequency or to re-sample some residential wells will be evaluated by the State.

COMMENT 2: Are the wells you plan to use for the early warning system in the immediate vicinity of the landfill or are they some distance from it?

RESPONSE 2: Most monitoring will be fairly close to the landfill. The location of the wells will be based on our knowledge of groundwater flow in the area. Over time, the monitoring program may be modified as we get more data. The soil in the area has a low permeability, so water moves slowly through it. There has been no indication of significant groundwater contamination at any distance from the landfill.

COMMENT 3: A creek to the north of the landfill runs near my property. Have you monitored that as well?

RESPONSE 3: A sample of the water and a sample of the sediment in the intermittent creek near the landfill have been collected and analyzed as part of the RI for the site. No contamination attributable to the landfill has been identified. Some pesticide levels, typical for an agricultural area, have been noted.

COMMENT 4: You mentioned that during implementation of the remedy you'll sample air. Do you also sample wells during implementation?

RESPONSE 4: Air monitoring is part of the Health and Safety component of the construction phase. Air monitoring will include particulate (dust) monitoring and monitoring for volatile organic compounds (VOCs). The frequency of the monitoring will be determined during the design phase and can be altered during the implementation phase according to the site specific conditions encountered during the construction of the landfill cap.

Sampling of the monitoring wells is usually not a component of the construction phase of a remedy. It is, however, part of the Operation and Maintenance of the remedy. At some time, near the completion of the construction phase, an Operation and Maintenance plan will be submitted to NYSDEC and NYSDOH for review and approval. During the review of this document, a schedule for taking samples from the monitoring wells will be established. Inspection schedules and routine maintenance procedures will also be specified. Contingency plans based on the results of the ongoing sampling and inspections will be included in the document.

COMMENT 5: So as you implement the remedy, you might find that vapors need to be treated?

RESPONSE 5: Treatment of vapors will not be feasible during the construction of the remedy. To ensure that any release of vapors is minimized , monitoring of these vapors will be required. Some vapors may be released from the landfill during construction of the remedy. If monitoring activities indicate that vapors are being released above acceptable levels, then construction activities will cease and appropriate mitigation measures will be implemented.

Gas vents will be installed as a component of the engineered cap. These vents will allow vapors built up underneath the cap to be passively released to the environment. The rate at which these vapors are released and the concentration of the contaminants in the released vapors will be evaluated during the operation and maintenance phase. At that time NYSDEC and NYSDOH will determine whether or not these vapors need to be treated. If treatment is needed, then a treatment system will be designed and implemented in a timely manner. Based on information gathered during the RI, it is not expected that a treatment system will be needed.

COMMENT 6: I reviewed the PRAP and have some concerns. There is no evidence of leachate staining outside of the landfill, no surface migration outside the footprint of the landfill, and groundwater contamination drops off a short distance from the landfill. You are talking about spending a significant amount of money to cap this landfill. Why does this need to be done at all? If your own testing shows that this is not significantly contaminated, why force these people to spend money to do this?

RESPONSE 6: There are leachate outbreaks from the landfill, resulting in groundwater contamination and soil contamination above the standards, criteria, and guidance values (SCGs) for this site. Even if hazardous wastes were not present, State regulations (Part 360) would require that this landfill be properly closed. Proper closure includes those actions required to ensure that the present risks and the future potential risks associated with the past disposal activities are reduced to levels which are protective of human health and the environment. Despite the current low degree of impact beyond the landfill boundaries, the documented hazardous waste at this site further requires the proper closure of this site. These closure requirements are to ensure that potential future changes such as erosion of the existing soil cover, exposure of waste, and release/migration of leachate do not add to the current and past impacts of site-specific contamination to the environment and/or public health. Also see Response # 11.

COMMENT 7: But the landfill has been inactive for a number of years.

RESPONSE 7: There are still leachate outbreaks from the landfill at this time. This site has continuing impacts to the environment and holds the potential for increased impacts in the future. State regulations require proper closure of landfills. This requirement exists for landfills which contain only solid waste and those landfills which contain both solid and hazardous waste. To leave this landfill in a state of partial closure is not consistent with Department regulations, which are intended to ensure that potential future changes, such as erosion of the existing soil cover, exposure

of waste, and release/migration of leachate, do not add to the current and past impacts of site-specific contamination to the environment and/or public health.

COMMENT 8: Has any of the contamination gone off Benson's land?

RESPONSE 8: No. There is no evidence of site-related contaminants migrating off the Benson property.

COMMENT 9: How long has the landfill been closed (not operating)?

RESPONSE 9: The site has been inactive for about 15 years. The site was never properly "closed" in accordance with applicable State regulations. The required closure involves constructing a properly designed cap over the landfill. The purpose of this properly designed cap is to ensure that potential future changes such as erosion of the existing soil cover, exposure of waste, and release/migration of leachate do not add to the current and past impacts of site-specific contamination to the environment and/or public health. This will be accomplished with the selected remedy.

COMMENT 10: Is the State going to own this property when the project is done?

RESPONSE 10: The site is currently owned by William Benson. The State has no interest in assuming ownership and responsibility for this site.

COMMENT 11: How are you going to close something that isn't being and won't be used?

RESPONSE 11: The selected remedy calls for the installation of an engineered cap which will be designed to minimize infiltration of precipitation into the waste and the migration of leachate from the waste. Specific details of the remedy are presented in Section 8 of the ROD. The NYSDEC is currently seeking to negotiate a consent order (legal agreement) with the PRPs involved with this site. Those PRPs are identified in the ROD. When a consent order is signed and the design is approved, then construction of the remedy will begin in a timely manner.

COMMENT 12: Are you going to shut down Mr. Benson?

RESPONSE 12: Mr. Benson's current solid waste transfer station activities are not a part of the Class 2 site, which is the subject of this remedial effort. The Division of Solid and Hazardous Materials is responsible for the oversight of Mr. Benson's solid waste activities. As long as he is in compliance with the regulations governing solid waste transfer stations, the decision to continue or not continue his solid waste transfer activities is Mr. Benson's.

COMMENT 13: Have you ever had a public meeting about this site before?

RESPONSE 13: This is the first public meeting for this site. Fact sheets for this site were issued to the public in June 1997, before the initiation of the field activities for the RI, and in December 1999, to announce the public meeting to present the Proposed Remedial Action Plan (PRAP).

COMMENT 14: You must have spent a lot of time getting to this point. Will the towns and businesses that were customers of Mr. Benson fund the cleanup? Will the State pay for it?

RESPONSE 14: Determining who will fund the remediation is a part of ongoing negotiations between currently identified potentially responsible parties (PRPs) and the NYS Department of Law (DOL). Those who are currently identified as PRPs are listed in the ROD. If new evidence or justification for pursuing other parties to fund the remedy is identified, then these parties will be included in the negotiations.

COMMENT 15: Does that mean people who have waste hauled to any landfill today are responsible for what they have hauled?

RESPONSE 15: Yes. The current statutes define the responsibilities of those who dispose of and haul solid and/or hazardous waste. Their responsibilities include cleaning up the site of the "waste disposal", if appropriate.

COMMENT 16: Why would the State go after third parties (the customers of Mr. Benson)? Why not go after Benson and his insurance company and let them sue the third parties?

RESPONSE 16: In fairness to each identified PRP, the State is required to pursue all PRPs to the best of its ability.

COMMENT 17: Do you know the types and amounts of chemicals that were deposited at the landfill? I would think that if these chemicals were so bad, there would have been effects on the Benson family or animals around the site.

RESPONSE 17: Section 3.1 of the ROD identifies the hazardous wastes known to have been disposed of at this site. In order for a person or animal to experience an effect from hazardous waste, they must come in contact with (be exposed to) the waste through ingestion (drinking or eating), breathing, or touching the contaminants. Once the exposure has occurred, the length of exposure, the concentration of the waste, and the toxicity of the waste all determine whether the person or animal experiences a health effect.

Besides toxicity, wastes can be determined to be hazardous according to their ignitability, corrosivity, and/or reactivity. The hazardous wastes (and their constituents) associated with waste disposal at this site are primarily associated with their toxicity, ignitability or reactivity. Hazardous wastes are determined to be hazardous because of their potential for hazardous consequences (i.e. toxicity, ignitability, corrosivity, and/or reactivity), when appropriate management practices are not followed. Although this site has had a history of inappropriate management practices, the natural conditions at this site have helped to minimize the long-term impacts of the hazardous waste disposed at this site.

The important point to note is that the natural conditions, by themselves, at this site are not adequate to properly manage the long-term impacts. That is why the selected remedy is necessary.

COMMENT 18: Did you have permission from Mr. Benson to do testing on the site?

RESPONSE 18: As is noted in the ROD, an access agreement has been executed between Mr. Benson, Elf Atochem, and Champion Products. In addition, Environmental Conservation Law (ECL) 27-1309 provides State representatives with access to any site where potential or documented disposal of hazardous waste may have or has occurred.

COMMENT 19: How long will the cleanup take to implement?

RESPONSE 19: The construction of the landfill cap should take less than a year. Before the construction can begin NYSDEC must negotiate a consent order (a legal agreement) with the PRPs. This consent order will be the basis for implementing the design, construction, operation and maintenance of the selected remedy. We hope to start construction in 2001, but this is dependent on how long the negotiations for the consent order and the design take.

COMMENT 20: You discussed a public health threat from the off-gassing at the landfill and the leachate outbreaks. Are these threats related to the hazardous wastes at the landfill, or are they just standard threats from a solid waste landfill? Do you believe that the hazardous wastes are increasing the public health threat from this landfill?

RESPONSE 20: The primary strategy behind placing an engineered cap on the landfill is to isolate the wastes and their potential threat to the public and the environment. If the wastes are properly isolated from the public and the environment, then the risks associated with the hazardous and non-hazardous constituents have been properly managed. In response to the second question in Comment #20, the answer is yes. The sources of gases and leachate in the landfill can be from both hazardous and non-hazardous waste, and both can be a threat to human health and the environment.

See also Response #6, #7, #8 and # 17.

COMMENT 21: If your only concern is trespassers who could be exposed to leachate at the landfill, wouldn't it be more appropriate to put up a fence and post signs at the landfill than to cap the landfill? Aren't there programs to deal with the proper closure of solid waste landfills?

RESPONSE 21: The proper closure of this landfill is required whether it is addressed by the hazardous waste program or the solid waste program. Because there is hazardous waste at the landfill, the landfill is being handled by the hazardous waste program. The selected remedy will properly close the site. The operation and maintenance (O&M) plan will ensure the continued effectiveness of the remedy. See also Response # 6, # 7, and # 17.

COMMENT 22: When were the standards you are using for the landfill closure adopted relative to when the landfill was operating and when it ceased operating?

RESPONSE 22: The regulations used as guidance for selecting this remedy became effective on November 26, 1996. There are differences between these regulations and the regulations in effect when this landfill stopped operating during the mid 1980s.

COMMENT 23: I have experience with a West Bloomfield landfill. Back in the 1970s some wastes from Crosman Arms were allowed to be taken to the landfill. A couple of years later, the town was told they had to close the landfill because the standards had changed. I was wondering if the Benson Landfill was a similar situation.

RESPONSE 23: In September 1973, the first version of the 6 NYCRR Part 360 (solid waste) regulations became effective. All landfills, including the William Benson Landfill and the West Bloomfield Landfill, would have been evaluated as to whether or not they were in compliance with the new regulations. Although more than one engineering report was sent to the Department by Mr. Benson for approval during the 1970's to mid 1980's, compliance with the Part 360 regulations has not yet been achieved. The selected remedy will bring the William Benson Landfill in compliance with applicable regulations..

COMMENT 24: I understand that "closure" means capping the landfill to keep water from moving down into the wastes. How will you prevent groundwater from getting in horizontally and moving through the wastes?

RESPONSE 24: During the design of the landfill cover, the engineers will evaluate the contribution of groundwater infiltrating into the waste mass from the area to the west and north. If the flow of groundwater through the waste is considered to be a significant, there are several possible methods to minimize the infiltration of groundwater into the landfill waste mass. In Section 8, the ROD specifies other issues which will be evaluated. The analysis will evaluate if some kind of barrier wall or other form of diversion is needed to prevent or minimize the continued generation of leachate. Based on current data, there is nothing to indicate that a barrier wall is necessary, but it will be further evaluated.

COMMENT 25: Elf Atochem contributed 40 tons of hazardous waste to the site. What is the total amount of hazardous waste at the landfill, and how much came from each responsible party? Could there be twice as much hazardous waste in there as has been reported?

RESPONSE 25: We have evidence of hazardous waste disposal by certain parties. The NYSDEC is compiling a list of responsible parties and their contributions to the landfill. See Comment #38 below.

COMMENT 26: Does your agency handle other Class 2 landfills around the state?

RESPONSE 26: Yes, the NYSDEC handles many other landfills, both municipal and private, which are classified as Class 2 sites due to the disposal of hazardous waste during their operating history as a solid waste landfill.

COMMENT 27: Is the cost for the cleanup just the subcontracting work or does that include monitoring costs? How much will construction cost? What are the other costs?

RESPONSE 27: The costs included in the PRAP and now in the ROD represent an estimate of the costs not only to construct the remedy (the capital cost) but also address the operation and monitoring costs (the annual cost). The combination of these costs is the present worth cost which is a calculation which presents both the capital and annual operating cost, in terms of their present value, to allow a comparison of the various alternatives to be made. These costs are presented for each of the alternatives evaluated in Table 4 of the ROD.

COMMENT 28: Is Mr. Benson being pursued to pay for this cleanup? Does the state consider the people who contributed to the landfill just as guilty as Benson? Are SUNY Geneseo and the Department of Transportation being pursued to contribute funds too?

RESPONSE 28: Yes, the State has submitted a motion for summary judgement to the court, seeking to establish the Bensons' liability as owners and operators, and will encourage the Bensons to enter into negotiations for payment of costs associated with the remediation of the site. The statute under which the State will pursue PRPs to pay for the remediation of this site is based upon the principal of " joint and several liability", which means it considers any owner, operator or disposer to be equally liable for the disposal of the waste at this site. Both SUNY Geneseo and the Department of Transportation have been identified as disposers at the landfill and are part of the group working to negotiate a settlement.

COMMENT 29: Can you explain the responsiveness summary?

RESPONSE 29: The responsiveness summary is the NYSDEC/NYSDOH response to comments received, either verbally at the PRAP meeting, or in writing, during the thirty day PRAP comment period.

A letter dated January 7, 2000 was received from Sidley & Austin on behalf of Champion Products, Inc. and included the following comments:

COMMENT 30: The PRAP states that the William Benson Landfill ("Site") poses a "significant threat to human health associated with dermal exposure to leachate outbreaks on the surface," and "a significant environmental threat associated with the impacts of contaminants to wildlife from contact with and ingestion of, leachate from the landfill" (PRAP p. 1) The record, however, as reflected in the Remedial Investigation ("RI") and Focused Feasibility Study ("FFS") findings, does not support this conclusion. For example, the Human Health Assessment in the RI states that "little or no risk" is associated with soil and leachate at the site, that exposure to groundwater that may be impacted "is expected to be minimal," and that potential for unmitigated off-site migration is "limited". (RI Section 12.1.9). Further, the Ecological Risk Assessment in the RI states that elevated concentrations of selected metals pose " minimal risk to plants and wildlife" (RI Section 12.1.10) The FFS reiterates the RI findings that the ecological risks are minimal (FFS Section 1.3.10), and further states that "[u]nder both present day and future exposure scenarios, the site poses a de minimis human health risk. (FFS Section 1.3.9).

The selected remedy is premised upon the incorrect characterization of the site as a "significant threat" to health and the environment (PRAP p.1). ... Since the site does not present a "significant threat," as evidenced by the RI and FFS findings, no additional remedial action is necessary.

RESPONSE 30: When the William Benson Landfill was placed on the NYS Registry of Inactive Hazardous Waste Disposal Sites in 1990, the William Benson Landfill satisfied the condition of 'significant threat' as that term was defined at that time. In 1992, the regulations, 6 NYCRR Part 375, were revised with a definition for what would constitute a "significant threat". In 1993, the NYSDEC Bureau of Hazardous Site Control reviewed the listing package for the William Benson Landfill and determined that the site met the criteria specified for "significant threat" in the new regulations and confirmed the previous Class 2 designation for this site.

The RI report indicates that the natural conditions at this site (i.e. geology, hydrogeology, etc) have been favorable to minimizing the migration of contamination from the landfill to the environment. The higher concentration levels recorded during the early sampling events for groundwater have attenuated to lower levels. Although current indicators toward potential risk are not as significant as past indicators for potential risk, this site has, historically, been a significant risk to human health and/or the environment. The site, in its present condition, continues to hold the potential to again have an uncontrolled release of contamination to the environment. This site, in its present condition, contains site-related contamination in locations where people may still be exposed to levels above NYS DEC TAGM 4046 recommended soil clean-up objectives now, or in the future. The selected remedy will mitigate these concerns.

Based upon ongoing discussions between the participating PRPs and NYSDEC, it was recognized by all parties that proper closure of this site according to the applicable statutes was necessary. This led the Department to accept from the PRPs a Focused Feasibility Study based on presumptive remedies for inactive hazardous waste landfills.

Even though the State did not agree with all of the conclusions within the RI report, prolonged discussions regarding the Human Health Assessment of this site in the RI report were deemed to be unnecessary. It was determined by the State that the presumptive remedy approach would address all the State's concerns. This site is an improperly closed mixed waste landfill which includes documented disposal of hazardous waste as part of its disposal history. Proper closure includes proper management of the human health and environmental risks associated with the site. The remedy proposed in the PRAP and selected in the ROD is necessary to ensure proper closure of this site.

COMMENT 31: The site history in the PRAP (PRAP p. 4) fails to note that Champion and Elf Atochem have fully cooperated with the State in this process.

RESPONSE 31: Section 3.2: Remedial History has been modified accordingly. Sections 4.0 and 5.0 in the ROD also address this issue.

COMMENT 32: The PRAP description of the soil analysis results notes that sixteen subsurface soil 0boring samples were taken, and that all but one were collected from within the first 12 feet below

ground surface ("bgs") (PRAP p. 7). Further, the PRAP notes that these samples revealed four exceedences of Standards, Criteria and Guidance Values ("SCGs") for zinc, three for magnesium, two for cadmium and one for selenium. The PRAP does not note, however that cadmium and selenium exceedences were only found in the 0-2 feet bgs samples, and not at any greater depth (RI Table 7-4). The PRAP also does not note that only one exceedence for zinc beyond the site-specific background level was found below 0-2 feet bgs. Thus, the "contaminants of concern" are, in large part, confined to the shallow subsurface soil.

RESPONSE 32: According to the description in the comment above, the two cadmium exceedences, the one selenium exceedence, and three of the magnesium exceedences were confined to the first two feet of subsurface soil. This means that six exceedences out of the total of 10 exceedences (60 %) were confined to the first two feet and that four exceedences of the total of 10 exceedences (40%) were at lower depths. The fact that 60 % of the contaminated soil is within the first two feet would indicate that surface run-off of leachate plus localized infiltration would be a primary route of migration for such a distribution of contamination. This would further support the need to control leachate migration by installing an engineered cap over the waste mass at this site.

COMMENT 33: The PRAP states that site-specific background levels for zinc exceed the typical eastern USA background levels. This suggests that elevated levels of zinc could be partially or wholly attributable to natural conditions. The considerably elevated site-specific levels of magnesium and calcium, also noted in the RI (RI Section 7.2.1.1), are not noted in the PRAP. The RI also states that "[e]levated levels of calcium and magnesium in the site soil and ground water media are attributed to the carbonate mineralogy of the gravel, cobbles, and boulders that characterize the clastic component of the overburden till unit." Moreover, it should be noted that the levels detected in three of the four exceedences for zinc and two of the three exceedences for magnesium were close enough to be almost indistinguishable from site specific background level. Thus, the RI findings suggest that most, if not all, of the presence of inorganic "contaminants of concern" s arguably attributable to natural conditions.

RESPONSE 33: No exceedences of calcium or magnesium were found in background samples. Therefore, all of the noted exceedences for calcium and magnesium are potentially due to migration the of "contaminants of concern" for this site. One of the purposes of this PRAP is to summarize the data for the public in a way that is as free from bias as is possible. The number of exceedences for magnesium and zinc were accurately reported. The summary of the facts in the PRAP and now in the ROD, in conjunction with the more detailed descriptions in the RI will provide an adequate framework for all interested parties to appropriately evaluate the trends and ramifications that are indicated by the data currently available.

COMMENT 34: In its determination of the presence of volatile organic compounds ("VOCs") in groundwater, the PRAP combines the results of the monitoring well sample analysis (29 samples) and the preliminary site characterization (21 samples) (PRAP Section 4.1.3). The PRAP notes 19 exceedences of New York State Department of Conservation Class "GA" groundwater standards in total, for 9 different VOCs. However, only one of the 19 exceedences was found in the monitoring well sample analysis (RI Table 7-8). The RI notes that the data collected on VOCs and other contaminants in groundwater indicate that "the landfill is having little measurable impact on the

groundwater and surface water quality in the vicinity of the Site, " and further, that "[u]nder current site conditions, very little leachate is being generated or released from the site." (RI Section 7.2.5). The RI Summary of the Analytical Results for Groundwater (RI Table 7-8) contains only the results of the monitoring well sample analysis, and does not include the preliminary site characterization data, which has been superseded by the comprehensive testing conducted in connection with the RI.

RESPONSE 34: There were three distinct data sets used by NYSDEC to evaluate the impact of the William Benson Landfill on the groundwater in close proximity to the site.

The first data set included samples taken from five monitoring wells installed in 1981. The results of the sampling of these wells were the basis for placing this site on the NYSDEC List of Inactive Hazardous Waste Disposal Sites as a Class 2 site.

The second data set was collected during the preliminary site characterization by push-probe sampling of the groundwater. During this activity, groundwater samples were taken at 22, closely-packed locations in close proximity to the landfill and were analyzed for the presence of VOC compounds. At 20 of the 22 sample locations, VOC contamination was detected. The sampling revealed that, on all sides of the landfill, the groundwater has been impacted within close proximity to the landfill.

After the preliminary site characterization was completed, 13 groundwater monitoring wells were installed as part of the RI. These monitoring wells were spaced further apart (not as closely packed) from each other and were further from the landfill. The contamination found in these wells was lower in concentration and frequency when compared to the push-probe results. This indicates that the current impact to groundwater appears to be limited to those areas which are in close proximity to the landfill.

The combination of all three data sets are important to make an accurate assessment of the nature and extent of the groundwater contamination at this site.

COMMENT 35: The cost estimate summary for Alternative 4 (Modified 6 NYCRR Part 360 Cover System) in the Summary of Evaluation Alternatives (PRAP p.15) is inconsistent with the cost estimate for Alternative 4 in the Summary of Proposed Remedy (PRAP p. 18-19). The present worth in the Summary of Evaluation Alternatives is $2,382,000, while the present worth in the Summary of Proposed Remedy is $2,274,000. The capital cost in the Summary of Evaluation Alternatives is $1,794,000 while the capital cost in the Summary of Proposed Remedy is $1,517,000. The higher present worth and capital cost are consistent with the FFS (FFS Table 4-3(b)).

RESPONSE 35: The correct costs were presented at the public meeting and are included in Table 4 of the ROD.

A letter dated January 7, 2000 was received from McDermott, Will, & Emery on behalf of Elf Atochem North America, Inc. and included the following comments:

COMMENT 36: The PRAP recounts the Site history in an incomplete and confusing fashion. The Site history should be described as follows. William Benson, Site owner and operator, never obtained the requisite permit to operate a sanitary landfill, nor did he close the Site in accordance with the requirements of 6 NYCRR Part 360 (sanitary landfill regulations). As a result of the Site owner/operator's failure to fulfill the regulatory requirements applicable to his operation of the landfill, which were intended to address potential risks from the land disposal of waste, NYSDEC listed the Site on the State Registry of Inactive Hazardous Waste Disposal Sites as a Class 2 site. A Class 2 site is one that poses a "significant threat to the public health or environment" and requires action. ECL 27-1305(4)(b)(2). In the early 1990s, the State threatened to sue certain parties, including Elf Atochem and Champion Products, Inc. ("Champions"), for costs associated with investigation and cleanup of the Site, in effect shifting responsibility for Site conditions from the owner/operator to customers of the Site who legally disposed of waste at the landfill.

RESPONSE 36: The order of the text in Section 3.1 has been changed and some text has been added to address the concern that it be clear that the Bensons, as the site owners and operators, had primary responsibility for the operation and closure of the landfill and have not yet made any contribution to the cost of the RI/FS to date.

Some of what is stated in Comment # 36 above is not accurate. The listing of the site had nothing to do with the fact that the site had not been properly closed. The Site was listed because the disposal of hazardous waste at this site had been documented. If the site had been properly closed, it is possible that the original classification for this site might not have been a Class 2 site because a properly engineered cap might have prevented significant migration of contaminants to the areas outside the footprint of the landfill cap. Even if the site had been properly closed at the time when disposal activities ceased in the mid-1980s, the site still would have been listed on the NYS Registry of Inactive Hazardous Waste Disposal Sites because there is documented disposal of hazardous waste at the William Benson Landfill inactive hazardous waste disposal site. It is anticipated that, after the proper implementation of the construction of the remedy, the William Benson Landfill site will be reclassified to a Class 4 site.

Legal options which were never pursued are not the type of information which is intended to be included in the section on Enforcement Status (Section 5.0). The primary purpose of the section on Enforcement Status is to document the legal actions which lead to the specific activities performed during the RI/FS. The primary purpose of the PRAP is to inform the public of the proposed remedy and to document the rationale supporting that recommendation. The Enforcement Status section is brief because the PRAP is primarily a technical explanation of the proposed remedy and its accompanying rationale.

COMMENT 37: Elf Atochem and Champion entered into a consent decree with the State in October 1995 pursuant to which those parties agreed to investigate conditions at the Site and prepare

a feasibility study based on which the State would choose a remedy for the Site. The results of those efforts by Elf Atochem and Champion are memorialized in the Remedial Investigation/Feasibility Study in the document repositories for the site.

RESPONSE 37: These issues have already been discussed in Sections 3.0, 4.0 & 5.0 in the PRAP. Language has been incorporated in the ROD to reflect that both Elf Atochem and Champion performed the activities and not just Elf Atochem as may have been implied.

COMMENT 38: The PRAP incompletely describes the universe of information available on waste disposal at the Site, focusing only on certain wastes generated by Pennwalt Corporation (Lucidol Division). The PRAP's discussion of this issue unfairly implicates Lucidol and inaccurately omits hazardous waste disposal by numerous other parties, including the other parties to the State's litigation concerning the Site (Champion Products, Inc., Agway, Inc., Niagara Mohawk Power Company ("Niagara Mohawk"), Minnesota Manufacturing and Mining Co., Inc. ("3M"), the New York State Department of Transportation ("NYSDOT"), and the State University of New York-Geneseo ("SUNY-Geneseo"). Wastes disposed of by these parties that were hazardous or contained hazardous substances include:

Agway, Inc:	Used pesticide containers, batteries
3M:	Formaldehyde drum, fiber barrels with sulfurous smelling yellow powder
Niagara Mohawk:	Cleaning agents containing petroleum distillates and used cans of insecticides
SUNY-Geneseo	Laboratory wastes and paint cans
NYSDOT	Paint cans, batteries, 55-gallon drums, auto and truck gas tanks, tires, brake drums
Champion Products, Inc.	Trichloroethylene

RESPONSE 38: In Section 3.1 the PRAP made a general statement concerning deposition of hazardous constituents by other entities. Section 5.0 lists who these other entities are. The participating PRPs have attempted to identify additional parties who may have disposed of waste at the site. These efforts have not yet been conclusively determined.

COMMENT 39: The PRAP inaccurately describes the size of the landfill. Its areal extent is 8 acres, not 13 acres.

RESPONSE 39: The error has been corrected in the ROD.

COMMENT 40: The cost estimates for the proposed remedy in the PRAP are inconsistent (e.g. total cost is estimated at $2,382,000 on page 15 and in Table 2 on page 21, but is estimated at $2,274,000 on page 19).

RESPONSE 40: The correct costs were presented at the public meeting and are included in Table 4 of the ROD.

APPENDIX B

Administrative Record

Documents

Focused Feasibility Study, William Benson Landfill, Revised November 1999, prepared by Macolm Pirnie, Inc.

Remedial Investigation Report for the William Benson Landfill, Volume 1: Report and Appendices A-E, Revised March 1999, prepared by Malcolm Pirnie, Inc.

Remedial Investigation Report for the William Benson Landfill, Volume 2: Appendix F, Revised March 1999, prepared by Malcolm Pirnie, Inc.

Remedial Investigation Report for the William Benson Landfill, Volume 3: Appendices G-J, Revised March 1999, prepared by Malcolm Pirnie, Inc.

William Benson Landfill RI/FS, Preliminary Site Characterization Report, November 1997, prepared by Malcolm Pirnie, Inc.

Engineering Investigations at Inactive Hazardous Waste Sites, Phase I Investigation, William Benson Landfill Site, January 1988, prepared by Engineering-Science in association with Dames & Moore

Correspondence

Letter dated January 6, 2000, form G. Anders Carlson, NYSDOH, to Michael J. O'Toole, NYSDEC, stating NYSDOH concurrence with the PRAP

Letter dated May 17, 1999, from Robert Schick, NYSDEC, to Michael Pinto, Elf Atochem, stating that the RI meets applicable legal and statutory requirements.

Data package dated May 1, 1998, from Recra Labnet laboratory to Wayne D. Mizerak , NYSDEC, concerning leachate seep L-6R which was sampled at the request of NYSDEC but not formally included in the RI report.

Data package dated July 12, 1991, from IT Pittsburg Laboratory to Wayne D. Mizerak, NYSDEC concerning soils samples taken next to leachate seeps on the surface of the landfill.

Data package dated July 10, 1991, from IT Pittsburg Laboratory to Wayne D. Mizerak, NYSDEC concerning leachate samples taken from leachate seeps on the surface of the landfill.

Data package dated July 9, 1991, from IT Pittsburg Laboratory to Wayne D. Mizerak, NYSDEC concerning leachate samples taken from leachate seeps on the surface of the landfill.

Data package dated July 10, 1991, from IT Pittsburg Laboratory to Wayne D. Mizerak, NYSDEC concerning soils samples taken next to leachate seeps on the surface of the landfill.

Memo dated March 4, 1991, from Claire Buckingham, NYSDOH, to Wayne Mizerak, NYSDEC, concerning attached map designating the locations of residential wells which had been sampled.

Letter dated January 31, 1991, from Ronald Tramontano, NYSDOH, to Earl Barcomb, NYSDEC, stating that no contamination has been found in the residential wells sampled to date.

Site Listing Package, dated March 8, 1990, Prepared by James Craft, NYSDEC, concerning the data and other site-related information that supported the listing of the site on the NYS Registry of Inactive Hazardous Waste Disposal Site.

Field log and sampling results, dated December 2, 1988, compiled by James Craft, NYSDEC.

Letter dated August 30, 1984, from Russell C. O'Gee, Lucidol, to NYSDEC with attachment of Industrial Chemical Survey, Generator Questionnaire, and Transporter Questionnaire.

Proposed Remedial Action Plan (PRAP) Comments

Letter dated January 7, 2000, from Katherine Adams, Sidley & Austin, representing Champion Products, to Wayne Mizerak, NYSDEC, providing comments on the PRAP.

Letter dated January 7, 2000, from Peter Sacripanti, McDermott, Will & Emery, representing Elf Atochem, to Wayne Mizerak, NYSDEC, providing comments on the PRAP.

Letter dated December 30, 1999, from Livonian Town Board, to Wayne Mizerak, NYSDEC, stating their support of the remedy proposed in the PRAP.

Memo dated December 14, 1999 from Meaghan Boice-Green, NYSDEC, to Wayne Mizerak, NYSDEC, containing the December 13, 1999 public meeting notes and list of questions asked.

Attendance list of December 13, 1999 public meeting.