RECORD OF DECISION

EPA
Region 2

FILABLE-HCS

Conklin Dumps Site

704013

Town of Conklin, Broome County, New York

March, 1991

DECLARATION FOR THE RECORD OF DECISION

SITE NAME AND LOCATION

Conklin Dumps Site
Town of Conklin, Broome County, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Conklin Dumps Site (the "Site"), located in the Town of Conklin, Broome County, New York, which was chosen in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document explains the factual and legal basis for selecting the remedy for the Site.

The State of New York concurs with the selected remedy. The information supporting this remedial action decision is contained in the administrative record for the Site. The administrative record index is attached.

ASSESSMENT OF THE SITE

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

DESCRIPTION OF THE SELECTED REMEDY

This operable unit is the final action for the Site. The selected remedy will provide containment through the installation of caps over the landfill material and leachate collection. Leachate will be discharged to the Binghamton-Johnson City Joint Sewage Treatment Plant, with or without pretreatment, as appropriate. If the sewage treatment plant is not available, then the leachate will be treated on-site and the treated effluent will be discharged to the nearby Carlin Creek. Also included in the selected remedy is groundwater monitoring, fencing, and deed restrictions.

The selected response action does not provide for active remediation of groundwater contamination from the Site since the natural degradation of the contaminants in the groundwater will result in an earlier attainment of groundwater standards than would be the case with groundwater extraction and treatment. Five-year reviews will be conducted as required by the NCP due to the fact that waste will remain on-site. The purpose of the five-year review is to ensure that the remedy continues to provide adequate protection of human health and the environment.

The landfills will be regraded as necessary prior to the installation of the caps to establish slopes which will encourage runoff and minimize erosion. The caps will contain the landfill material and will minimize infiltration of precipitation into the landfill material. This will minimize the potential for future contamination of the groundwater.

The major components of the selected remedy include the following:

- Cutting the existing sides of the landfills to slopes of no greater than approximately 33%. The top surfaces of the landfills will be regraded to slopes of no less than 4% to provide for proper drainage.
- Installation of leachate collection wells and a leachate collection trench or toe drain at the Upper Landfill and leachate collection trench at the lower landfill to a depth sufficient to eliminate leachate seeps.
- Installation of multimedia caps over the landfill material. Water infiltrating through the vegetative and protective layers of the cap will be intercepted by the impermeable flexible membrane layer and conveyed away from the landfill material. The multi-media caps will be consistent with applicable regulations that require that when a flexible membrane liner (FML) is used in place of clay, the FML may have a permeability no greater than 1×10^{-12} cm/sec. The design requirements contained in the 6 NYCRR Part 360 standards will be incorporated into the cap design.
- Installation of a gravel gas venting layer, with a filter fabric layer placed over the gravel. The FML will be placed over the filter fabric, and another layer of filter fabric will be placed on top of the FML.
- Seeding and mulching of the topsoil layer to prevent erosion and provide for rapid growth of vegetation.

- Collection of the leachate followed by either its discharge to the Binghamton-Johnson City Sewage Treatment Plant for treatment or its treatment on-site via an air stripping treatment plant and discharge to Carlin Creek. (If discharge to the sewage treatment plant is not possible, then the leachate treatment system will be constructed concurrently with the cap. The system will be located adjacent to the Lower Landfill. Leachate collected at the Upper Landfill will be transported to the Lower Landfill through a gravity flow pipe.)

- Installation of fencing to further protect the integrity of the caps by restricting access to the Site. Periodic inspection of the caps, and maintenance as necessary, will provide for long-term effectiveness and permanence of the alternative.

- Imposition of property deed restrictions, if necessary. The deed restrictions will include measures to prevent the installation of drinking water wells at the Site, and restrict activities which could affect the integrity of the cap.

- Initiation of a monitoring program upon completion of the closure activities. The monitoring program will provide data to evaluate the effectiveness of the remedial effort and will act as an early warning system to protect private wells in the area.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. However, this remedy only partially satisfies the statutory preference for treatment as a principal element of the remedy. The treatment of contaminated groundwater was found to be impracticable. Furthermore, the size of the landfill, and the fact that no on-site hot spots have been identified that represent the major sources of contamination, preclude a remedy in which contaminants can be excavated and treated effectively.

Because this remedy will result in hazardous substances remaining on-site, a review will be conducted no later than five years after completion of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

Constantine Sidamon-Eristoff
Regional Administrator

Date 3/29/91

ROD FACT SHEET

SITE

Name:	Conklin Dumps
Location/State:	Conklin, Broome County, New York
EPA Region:	II
HRS Score (date):	33.93 (March, 1989)
NPL Rank (date):	774/1189 (March, 1989)

ROD

Date Signed: March, 1991

Selected Remedy

Source Control Component:	Capping of the Landfill utilizing a multimedia cap.
Groundwater:	Leachate wells at the Upper Landfill, interceptor trench at the Lower Landfill, and discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant.

Capital Cost:	$ 3,145,703
O & M:	$ 86,669/yr
Present Worth:	$ 4,352,078

LEAD

State Enforcement

Primary Contact: Richard Ramon, P.E. (212) 264-1336

Secondary Contact: George Shannahan, Esq. (212) 264-5342

PRP: Town of Conklin

PRP Contact: Mark Gorgos, Town Attorney, (607) 723-9511

WASTE

Type:	Volatile Organics
Medium:	Groundwater
Origin:	Pollution originated as a result of illegal disposal of hazardous wastes at this location.

Decision Summary

Conklin Dumps Site

Town of Conklin,
Broome County, New York

EPA
Region 2

March, 1991

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ATTACHMENTS

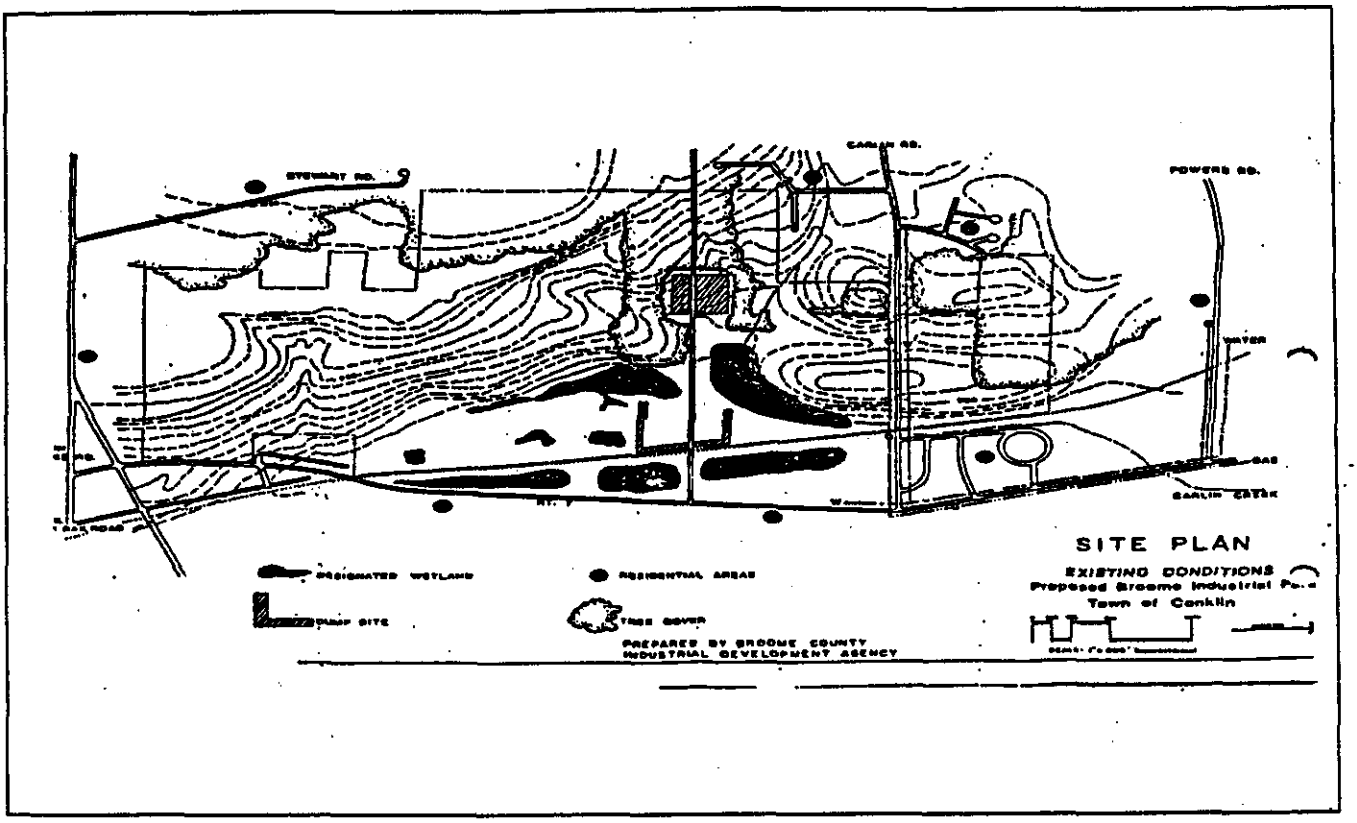


Figure 1 - Conklin Dumps Site Plan

SITE NAME, LOCATION, AND DESCRIPTION

The Site (see figure 1), located in the Town of Conklin in Broome County, New York, is an 8.5-acre landfill situated in a sparsely populated area within the perimeter of the Broome Corporate Park in Broome County. The Site is located approximately one mile north of the Kirkwood Interchange of Interstate Route 81 and approximately ten miles southeast of Binghamton, New York (population approximately 55,000, 1980 Census). The Site consists of two inactive municipal landfills (the "Upper" and the "Lower Landfill"), both owned by the Town of Conklin. The Lower Landfill was operated by the Town of Conklin from 1964 to 1969. This landfill was used to dispose of municipal refuse, and is estimated to contain a total fill volume of approximately 25,000 cubic meters. The Lower Landfill is located adjacent to the 100 year floodplain of the Susquehanna River, about 0.5 miles to the east of the river. Designated wetlands surround a large portion of the Lower Landfill.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Upper Landfill was operated by the Town of Conklin for the disposal of municipal wastes from 1969 until 1975, when a closure order was issued by the New York State Department of Environmental Conservation (NYSDEC). The Upper Landfill is estimated to contain a total fill volume of approximately 55,000 cubic meters of waste material.

In 1984, O'Brien and Gere Engineers, Inc. initiated a two phase hydrogeologic investigation of the Broome Corporate Park for the Broome Industrial Development Agency. The purpose of the investigation was to determine whether the Broome Corporate Park could be developed. A phase I hydrogeologic investigation was completed in March 1984. This investigation evaluated the potential for

contamination and development limitations of the area. A Phase II hydrogeologic investigation was completed in February 1985. This investigation characterized the local hydrogeology and identified the hydrogeologic conditions that would affect development of the industrial park. The investigations identified the presence of leachate seeps from the Site. In addition, groundwater monitoring wells located within the perimeter of the dumps indicated the presence of low levels of contaminants.

In 1985, a work plan for conducting a remedial investigation and feasibility study (RI/FS) was prepared by O'Brien and Gere and was submitted to NYSDEC. In June 1986, the field efforts were completed, but negotiations between the Town and the State on the Consent Order for funding of the project continued until June 1987 (the Consent Order was signed by the NYSDEC Commissioner on June 12, 1987), causing delays in finalizing the results of the investigations. The Site was proposed for inclusion on the National Priorities List in June, 1986 and was listed on the NPL on March 30, 1989.

An RI report was completed in December 1988. The RI Report was approved by NYSDEC on February 12, 1990, contingent upon the inclusion of additional groundwater sampling to obtain validated data at critical locations, methane monitoring, and field delineation of the wetlands in the vicinity of the Lower Landfill.

The required round of sampling was completed in June 1990. Groundwater samples from both the Upper and Lower Landfills were analyzed for volatile organics and selected metals.

Most of the contamination was found directly downgradient from the Upper Landfill in one well. Only inorganics were found in groundwater downgradient from the Lower Landfill. Leachate emanating from both the Upper and Lower Landfills was found to contain detectable levels of volatile organics and inorganics.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

The RI/FS report and the Proposed Plan for the Conklin Dumps Site were released to the public for comment on February 4, 1991. These two documents were made available to the public in the administrative record and in information repositories maintained at the EPA Docket Room in Region II, New York, at the Conklin Town Hall, 1271 Conklin Road, Conklin, New York, and at NYSDEC's offices in Kirkwood and Albany, New York. Notice of the availability of these documents and a public comment period were published in the Press and Sun Bulletin, a newspaper of general circulation in Broome County. A public comment period on these documents was held from February 4, 1991 through March 6, 1991. In addition, a public meeting was held at the Town of Conklin Town Hall on February 25, 1991. At this meeting, representatives from the EPA and NYSDEC answered questions about problems at the Site and the remedial alternatives under consideration. Responses to the comments received during the public comment period are included in the Responsiveness Summary, which is appended to, and a part of, this ROD.

SCOPE AND ROLE OF OPERABLE UNIT

The purpose of this response action is to reduce the risk to human health and the environment due to the contamination of the on-site groundwater, to restore the groundwater underlying the Site to levels consistent with state and federal regulations, and to ensure protection of the air, and ground and surface water in the vicinity of the Site from continued release of contaminated leachate.

uman health and the environment will be protected through containment of the landfill material and collection and treatment of the leachate.

This response action applies a comprehensive approach (i.e., one operable unit) to remedial action at the site. In other words, this project has not been segmented into incremental portions.

NYSDEC is the lead agency for the project, EPA is the support agency.

SUMMARY OF SITE CHARACTERISTICS

Shale/siltstone bedrock underlies the entire site, with depth to bedrock varying from 80 feet (ft) below the surface of the Upper Landfill to 130 ft below the surface of the Lower Landfill. The bedrock is covered by a varying thickness of glacial till and other glacial eposits.

The depth of refuse at the Upper Landfill varies from approximately 10 ft to 30 ft. The refuse contained in the Upper Landfill is in direct contact with the underlying glacial till formation except along its eastern border. The east side of the landfill is underlain by a lens of low permeability silt and fine sand. This silt layer varies in depth from approximately 10 ft to 30 ft and extends downgradient from the base of the refuse.

The depth of refuse at the lower landfill varies from approximately 6 ft to 12 ft. Refuse contained in the Lower Landfill is underlain by sand and gravel glacial outwash. This sand and gravel layer is approximately 20 ft thick and is underlain by the glacial till. Groundwater is encountered at 1 and 14 ft below the ground surface except under the Upper andfill, where the groundwater is approximately 24 ft below the surface.

The horizontal groundwater flow direction beneath the Site is from west to east toward the Susquehanna River. The hydraulic gradient is approximately 0.07 ft/ft in the upland portion of the Site where the Upper Landfill is located. The hydraulic gradient in the lower area of the Site, including the Lower Landfill and the sand and gravel outwash, is approximately 0.01 ft/ft.

The upland area encompassing the Upper Landfill is underlain predominantly by glacial till which has a low permeability (2.3×10^{-7} to 1.4×10^{-4} cm/sec), resulting in an estimated groundwater flow velocity of approximately 1.3×10^{-4} ft/day to 0.05 ft/day. The Lower Landfill is underlain by outwash sand and gravel which has a relatively high permeability (4.3×10^{-4} to 6.0×10^{-3} cm/sec). This, when combined with the low flow gradient, results in an estimated ground water velocity beneath the Lower Landfill ranging from 0.05 ft/day to 0.70 ft/day.

The RI report summarizes the data collected during the RI and from previous studies conducted at the Site. These data established the basis for completing the site risk assessment and were used in conjunction with the June 1990 groundwater data to evaluate remedial options for the Site.

The chemical analytical data resulting from the on-site investigation indicate that the groundwater at the Upper Landfill contained detectable levels of volatile organics and inorganics. Most of the contamination was found directly downgradient from the Upper Landfill in Well #11 (located at the toe of the Landfill). Only inorganics were found in groundwater downgradient from the Lower Landfill. Leachate emanating from both the Upper and Lower Landfills was found to contain detectable levels of volatile organics and inorganics. A comparison of the analytical data from leachate samples indicates that the disposal of hazardous substances in the Lower Landfill was probably minimal compared to that in the Upper Landfill.

ertain compounds in the ground water and leachate exceed New York State Class GA Groundwater Standards. Chloroethane, 1,2-dichloropropane, and xylene have been detected at concentrations above Class GA standards at the Upper Landfill. Xylene (7 parts per billion (ppb) in 1990) has historically been below or just above the Class GA standard (5 ppb). The concentration of 1,2-dichloropropane (9 ppb in 1990) has been decreasing over the past four years, and most recently was detected just above the Class GA standard (5 ppb). Chloroethane was observed at a concentration of 68 ppb in 1990. Chloroethane was utilized as the constituent of concern at the site. No detectable contaminants were found in Carlin Creek waters.

SUMMARY OF SITE RISKS

O'Brien & Gere conducted a Risk Assessment (part of the RI) of the "no-action" alternative to evaluate the potential risks to human health and the environment associated with the Site in its current state. The risk assessment focused on the groundwater contaminants which are likely to pose the most significant risks to human health and the environment (indicator chemicals).

The risk assessment evaluates the potential impacts on human health and the environment at the site assuming that the contamination at the site is not remediated. This information is used to make a determination as to whether remediation of the site may be required. The RI report presented a detailed site specific risk assessment which addressed site conditions and exposures. The risk assessment qualitatively and quantitatively evaluated the hazards to human health and the environment at the Landfills. The qualitative analysis characterized the potential exposure pathways while the quantitative analysis determined the risk of the complete pathways.

The air pathway for existing site conditions was identified in the RI report as incomplete. This determination was based upon the low levels of volatile organics detected in the Site ground water and leachate. Air monitoring conducted during the RI, soil vapor monitoring conducted during the Phase I Hydrogeologic Investigation, and methane monitoring conducted in June 1990 confirmed this determination.

Cancer potency factors (CPFs) have been developed by EPA's Carcinogenic Assessment Group for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. CPFs, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the CPF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Cancer potency factors are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied.

Reference doses (RfDs) have been developed by EPA for indicating the potential for adverse health effects from exposure to chemicals exhibiting noncarcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals. Estimated intakes of chemicals from environmental media (e.g., the amount of a chemical ingested from contaminated drinking water) can be compared to the RfD. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans). These uncertainty factors help

ensure that the RfDs will not underestimate the potential for adverse noncarcinogenic effects to occur.
The direct contact exposure pathway was identified as functional due to the presence of detectable contaminants in the landfill leachate. Under future site development scenarios, the pathway was considered complete.

The human exposure pathways are ingestion of groundwater and dermal contact with leachate. EPA considers risks in the range of 10^{-4} to 10^{-6} to be acceptable. This risk range can be interpreted to mean than an individual may have a one in ten thousand to a one in a million increased chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at the Site.

The quantitative assessment evaluated intentional ingestion of groundwater by humans and dermal contact with leachate by humans. It was determined, based on the evaluation of sample concentrations from the most recent sampling round (June 1990), that neither pathway posed an unacceptable health risk.

Although current health risks are in the acceptable range, state and federal groundwater standards are being violated in the vicinity of Well #11 (See figure 2). Actual or threatened releases of hazardous substances from the Site, if not addressed by implementing the response action selected in this ROD, may present a current or potential threat to public health, welfare, or the environment. Therefore, remedial action is required.

DESCRIPTION OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected site remedy be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent

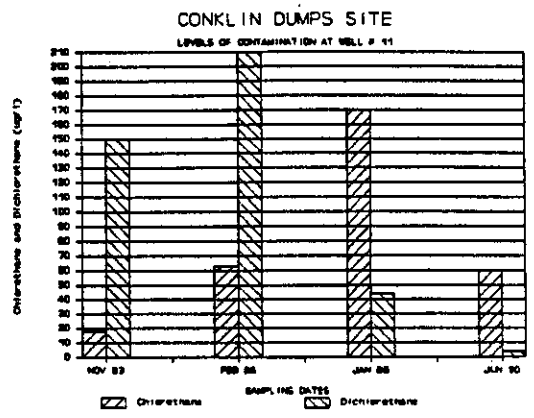


Figure 2 - Contamination Level at Well # 11

solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

Remedial action objectives are specific goals to protect human health and the environment; they specify the contaminant(s) of concern, the exposure route(s), receptor(s), and acceptable contaminant level(s) for each exposure route. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment.

The risk assessment concluded that the risk to human health due to site-related exposure to groundwater, landfill leachate, or surface water (sediments) was at the upper bounds (10^{-4}) for acceptable exposure levels. However, certain compounds in the groundwater and leachate exceed New York State Class GA Groundwater Standards which have been determined to be ARARs for the Site. Chloroethane, 1,2-dichloropropane, and xylene have been detected at concentrations above Class GA standards at the Upper Landfill.

ylene (7 ppb in 1990) has historically been below or just above the Class GA standard (5 ppb). The concentration of 1,2-dichloropropane (9 ppb in 1990) has been decreasing over the past four years and most recently was detected just above the Class GA standard (5 ppb). Chloroethane was observed at a concentration of 68 ppb in 1990. The recent xylene and 1,2-dichloropropane concentrations are considered insignificant when compared to the standards (5 ppb).

The groundwater contamination is confined to a small area around Well # 11. It appears that due to the nature of the soil, very little off-site migration of contaminated groundwater has occurred since the closure of the landfill.

The following remedial action objectives were established for the FS:

- Prevent ingestion of groundwater containing site-related constituents of concern (chloroethane) at concentrations significantly exceeding Class GA standards.
- Prevent the migration of constituents of concern from the landfill material that could result in groundwater concentrations above Class GA standards.
- Restore the aquifer to concentrations that meet Class GA standards for site-related constituents of concern (chloroethane).

Accordingly, the FS evaluates in detail, six remedial alternatives for addressing the contamination associated with the Site.

These alternatives are:

Alternative 1: No Action with Monitoring

Capital Cost: none
O & M[1] Cost: $15,000/yr
Present Worth Cost: $111,446
Time to Implement*: 7-9 years
* Assuming Natural Degradation
[1]Operation & Maintenance

Alternative 1 is the no-action alternative. This alternative would provide for an assessment of the environmental conditions if no remedial actions are implemented. The no-action alternative would require implementation of a groundwater monitoring program. This program would be used to monitor groundwater conditions and provide a data base for future remedial actions which may be required. Five-year reviews would be conducted as required by the NCP due to the fact that the landfilled material would remain on-site. The purpose of the five-year reviews is to ensure that adequate protection of human health and the environment is maintained.

Alternative 1 would rely upon natural degradation of the constituent of concern (chloroethane) to reduce the concentration of chloroethane in the groundwater near Well #11 to below Class GA groundwater standards (5 ppb).

Alternative 2: Multi-Media Cap on Both Landfills, Active Leachate Collection, and either discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant or On-Site Treatment (Air Stripping)

Time to Implement*: 7-9 years (includes remedial design)
* Assuming Natural Degradation

There are four options associated with Alternative 2

Option A: Leachate Wells at the Upper Landfill, Interceptor Trench at the Lower Landfill, and On-Site Treatment (Air Stripping)

Capital Cost: $3,256,773
O & M Cost: $92,901/yr
Present Worth Cost: $4,558,947

Option B: Leachate Wells at the Upper Landfill, Interceptor Trench at the Lower Landfill, and Discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant

Capital Cost: $3,145,703
O & M Cost: $86,669/yr
Present Worth Cost: $4,352,078

Option C: Interceptor Trenches at the Both Landfills, and On-Site Treatment (Air Stripping)

Capital Cost: $3,327,098
O & M Cost: $93,871/yr
Present Worth Cost: $4,644,183

Option D: Interceptor Trenches at Both Landfills, and Discharge to Binghamton-Johnson City Joint Sewage Treatment Plant

Capital Cost: $3,204,428
O & M Cost: $87,479/yr
Present Worth Cost: $4,423,255

This alternative would provide containment through the installation of caps over the landfill material and, unlike the other alternatives, active leachate collection at the Upper Landfill. Active leachate collection under options A and B at the Upper Landfill would be accomplished through the installation of leachate collection wells. The leachate collection wells would be drilled to the bottom of the fill material. It is anticipated that each well would have a deep and shallow well screen, with a removal seal separating the well screens. Initially, the shallow screened intervals would be pumped to remove leachate from refuse above the groundwater table. At some point in the future, the lower screened intervals located within the fill below the groundwater table may also be pumped. The leachate collection system at the Upper Landfill would also include a perimeter toe drain. Leachate would be collected at the Lower Landfill through a leachate collection trench installed to a depth sufficient to eliminate any future leachate seeps. Leachate would be treated on-site using air stripping, or at a nearby activated sludge sewage treatment plant (Binghamton-Johnson City Joint Sewage Treatment Plant). Under options A and C, treated effluent would be discharged to nearby Carlin Creek. Under options B and D, leachate collected at the landfills would be discharged into on-site sanitary sewer lines following any necessary pretreatment.

Also included in Alternative 2 would be groundwater monitoring, fencing, deed restrictions, and five-year reviews as required by the NCP. The landfills would be regraded as necessary prior to installation of the caps to establish slopes which would encourage runoff and minimize erosion. The caps would contain the landfill material and minimize infiltration of precipitation into the landfill material. This would minimize the potential for future contamination of the groundwater.

Under options A and C, air emissions would be in compliance with all applicable standards. Pre-treatment for removal of iron and manganese would likely be necessary. The on-site treatment plant would be located adjacent to the Lower Landfill. Leachate from the Upper Landfill would be transported to the treatment system at the Lower Landfill through a gravity-flow pipe. Treated effluent would be discharged to Carlin Creek. The treatment system would be operated 24 hours per day until the leachate generation rate drops below a predetermined practical treatment rate. At that time, leachate would be temporarily stored on-site and then treated by the air stripper

whenever sufficient quantities were accumulated.

Alternative 2 would also rely upon natural degradation of chloroethane in excess of the Class GA groundwater standard in the groundwater in the vicinity of Well #11.

Alternative 3: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gallons per day (gpd)), and On-Site Treatment (Air Stripping)

Capital Cost: $3,392,130
O & M Cost: $111,468/yr
Present Worth Cost: $4,934,726
Time to Implement: 14-24 years (includes remedial design)

In addition to the actions comprising Alternative 2, Alternative 3 includes groundwater extraction and treatment.

The groundwater extraction system would remove impacted groundwater in the vicinity of Well #11 through extraction wells. The extraction wells would be located between Well #11 and Wells #3 and #4. The groundwater extraction system would be operated 24 hours per day until such time that the concentration of chloroethane is at or below Class GA standards. It is believed that the groundwater extraction process would interfere with the natural degradation process since the dilution of contaminant levels would inhibit biological degradation of such contaminants by the microbes in the soil. Therefore, an active system of groundwater extraction would actually take longer than the passive process of natural degradation in attaining Class GA groundwater standards.

Unlike Alternative 2, the groundwater and leachate treatment system (air stripping) for Alternative 3 would be located at the Upper Landfill, adjacent to an extraction well. Leachate from the Lower Landfill would be either pumped up to the treatment system or temporarily stored and then transported by a tanker truck to the treatment system. The treatment system would be designed to achieve effluent limitations established pursuant to the requirements of the State Pollutant Discharge Elimination System (SPDES) program. Pretreatment for iron and manganese in the groundwater and leachate would be required to prevent fouling of the stripping system. A backwash system would also be incorporated into the stripper design to obviate any fouling that might result from residual metals passing through the stripper. The treatment system would be operated 24 hours per day until the groundwater being extracted attained Class GA groundwater standards. At that time, leachate would be temporarily stored on-site and then treated by the air stripper whenever sufficient quantities were accumulated. Treated groundwater and leachate would be discharged to Carlin Creek.

Long-term monitoring and five-year reviews as required by the NCP would be included.

Alternative 4: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gpd) and On-Site Treatment (Oxidation)

Capital Cost: $3,480,580
O & M Cost: $138,188/yr
Present Worth Cost: $5,113,678
Time to Implement: 14-24 years (includes remedial design)

Alternative 4 is the same as Alternative 3, except that Alternative 4 would utilize on-site treatment by chemical oxidation instead of air stripping. A leachate collection system would be installed around the toe of each landfill and collected leachate would be treated with the groundwater. The groundwater extraction system would be as described in Alternative 3.

Long-term monitoring and five-year reviews as required by the NCP would be included.

Alternative 5: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gpd) and Treatment Off-Site

Capital Cost: $3,237,850
O & M Cost: $619,140/yr
Present Worth Cost: $10,893,217
Time to Implement: 14-24 years (includes remedial design)

Alternative 5 is the same as Alternatives 3 and 4, except it would utilize off-site treatment at a publicly owned treatment works (POTW) or a Resource Conservation and Recovery Act (RCRA) approved facility, if discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant is not approvable.

The groundwater and leachate would be temporarily stored on-site and then transported to an approved facility for treatment and disposal. Approximately 40 tanker loads per week would be required during the period when both leachate and groundwater are being collected. Pump and treat operations would continue until the groundwater being extracted attained Class GA groundwater standards. At that time, only collected leachate would need to be transported to an approved facility for treatment and disposal.

Long-term monitoring and five-year reviews as required by the NCP would be included.

Alternative 6: Consolidation of Both Landfills, Multi-Media Cap on Upper Landfill, Leachate Collection, and On-Site Treatment (Air Stripper)

Capital Cost: $3,800,794
O & M Cost: $100,405/yr
Present Worth Cost: $5,218,316
Time to Implement*: 7-9 years (includes remedial design)
*Assuming Natural Degradation

Alternative 6 would provide containment of the landfill materials through consolidation of the Lower Landfill material with the Upper Landfill material at the Upper Landfill site and the installation of a cap over the consolidated material. Leachate collection would be implemented at the Upper Landfill. Leachate would be treated on-site at the Upper Landfill using air stripping. Treated effluent would be discharged to Carlin Creek. Also included in Alternative 6 would be groundwater monitoring, fencing, deed restrictions and five-year reviews as required by the NCP.
This alternative would involve excavating the material in the Lower Landfill and transporting it to and placing it on the Upper Landfill. Samples of the Lower Landfill material would have to be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) test to insure that the material is not hazardous. Any material deemed hazardous would have to be transported off-site to a RCRA facility for treatment and/or disposal. Additionally, dewatering of the landfill excavation would need to be performed in areas where the landfill material is located below the water table. It is assumed that the water would be managed as hazardous and would be transported to and disposed of at a RCRA facility.

Alternative 6 would rely upon natural degradation of chloroethane to reduce chloroethane levels to below Class GA standards in the groundwater in the vicinity of Well #11.

Long-term monitoring and five-year reviews as required by the NCP would be included.

SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria, namely overall protection of human health and the environment, compliance with ARARs, long-term effectiveness and permanence, reduction of toxicity, mobility or volume, short-term

effectiveness, implementability, cost, and state and community acceptance.

Each criteria will be briefly addressed with respect to the alternatives for remediation of the site.

o Overall Protection of Human Health and the Environment

Alternative 1 would provide for overall protection of human health and the environment through natural degradation of constituents of concern in the groundwater. Alternative 1 would not include capping of the landfill material or leachate collection. While natural degradation of constituents of concern in groundwater could be expected to occur, the potential would remain for future migration of constituents of concern from the landfill material.

Alternative 2 would provide for overall protection of human health and the environment with capping of landfill materials and active leachate collection to prevent migration of constituents of concern from landfill materials to groundwater, and deed restrictions to prohibit potable use of groundwater. Natural degradation of constituents of concern in the groundwater is expected to reduce concentrations of those constituents to groundwater standards in the short term.

Alternatives 3 through 5 would provide for overall protection of human health and the environment with capping of landfill materials and leachate collection to prevent migration of constituents of concern from landfill materials to groundwater, extraction and treatment of groundwater to reduce concentrations of constituents of concern in the aquifer to groundwater standards, and deed restrictions to prohibit potable use of groundwater.

Alternative 6 would provide for overall protection of human health and the environment with capping of landfill materials and leachate collection to prevent migration of constituents of concern from landfill materials to groundwater, to reduce concentrations of constituents of concern in the aquifer to groundwater standards, and deed restrictions to prohibit potable use of groundwater.

o Compliance with ARARs

All technologies proposed for use in Alternatives 2 through 6 would be designed and implemented to satisfy all ARARs. Federal and state regulations dealing with the handling and transportation of hazardous wastes to an off-site treatment facility would be followed. The off-site treatment facility would be fully EPA-approved. RCRA wastes would be treated using specific technologies or specific treatment levels, as appropriate, to comply with land disposal restrictions.

o Long-Term Effectiveness and Permanence

Alternatives 2 through 6 would be equally effective over the long-term. Each of Alternatives 2 through 6 employ adequate and reliable controls to prevent future migration of constituents of concern from landfill materials to groundwater and reduce constituent concentrations in groundwater to Class GA groundwater standards. Alternative 1 would provide for reduction of constituent concentrations in groundwater to Class GA standards and would employ an adequate and reliable control to monitor groundwater conditions, but would not provide for prevention of migration of constituents from landfill materials to groundwater.

o Reduction in Toxicity, Mobility, or Volume Through Treatment

Alternative 1 would not include the use of any treatment method. Concentrations of constituents of concern in groundwater would be expected to be reduced, however, through

natural degradation processes in the aquifer.

Alternative 2 includes treatment of leachate with an on-site air stripper system (options A and C) or discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant (options B and D), satisfying the statutory preference for treatment. Nearly complete removal of organic constituents in the leachate would be expected with air stripping. Air stripping is an irreversible treatment method. Further, concentrations of constituents of concern in groundwater would be expected to be reduced through natural degradation processes in the aquifer, and mobility of constituents of concern in the landfill materials would be reduced with capping and leachate collection.

Alternatives 3 and 6 would satisfy the statutory preference for treatment with the inclusion of air stripping of groundwater (Alternative 3 only) and leachate. Air stripping would provide for nearly complete removal of volatile organics in groundwater and leachate. Air stripping is an irreversible treatment method. Minimal levels of residual constituents of concern in treated groundwater and leachate and in the aquifer would be further reduced through natural degradation processes. Further, a reduction in the mobility of constituents of concern in landfill materials would be expected with capping and leachate collection. Alternative 6 would provide an additional reduction in mobility through consolidation of Lower Landfill material with the Upper Landfill.

Alternative 4 would satisfy the statutory preference for treatment with the inclusion of chemical oxidation of groundwater and leachate. Chemical oxidation would provide for nearly complete destruction of volatile organics in groundwater and leachate as would the off-site treatment that would be required under Alternative 5. Chemical oxidation is an irreversible treatment method. Minimal levels of residual constituents of concern in treated groundwater and leachate and in the aquifer would be further reduced through natural degradation processes. Further, a reduction in the mobility of constituents of concern in landfill materials would be expected with capping and leachate collection.

o Short-Term Effectiveness

Although the remedial objective concerning prevention of migration of constituents from landfill materials to groundwater would not be achieved through Alternative 1, the remedial objectives related to prevention of ingestion of groundwater and the restoration of the aquifer to Class GA standards would likely be attained. Although it would be highly unlikely, the potential would exist for unrestricted installation of potable wells near the Site. Natural degradation processes are expected to reduce concentrations of constituents of concern to groundwater standards within approximately 7 to 9 years. Protection of workers during monitoring activities would be achieved through the use of appropriate protective equipment.

Alternative 2 would be effective over the short-term. There would be no short-term impacts on the community during remedial actions. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment. There would not be any environmental impacts during remediation; contaminant transport via fugitive emissions during cap construction would be minimized through appropriate methods such as dust control. Installation of a cap would prevent generation of additional leachate. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 7 to 9 years through natural degradation. Prevention of ingestion of groundwater would likely be attained following implementation of deed restrictions.

'lternatives 3 through 5 would be effective ⌄ver the short-term. There would be no short-term impacts on the community or the environment during remedial action. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment during remedial activities. Contaminant transport via fugitive emissions during cap construction would be minimized through appropriate methods such as dust control. Installation of a cap would prevent additional leachate generation. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 14 to 24 years through extraction and treatment of groundwater. The groundwater extraction process would interfere with the natural degradation process since the dilution of contaminant levels would inhibit biological degradation of such contaminants by the microbes in the soil. Therefore, an active system of groundwater extraction will actually ake longer than the passive process of natural degradation in attaining Class GA groundwater standards. Prevention of the potential for ingestion of groundwater would likely be attained following implementation of deed restrictions.

Alternative 6 would be effective over the short-term. There would be no short-term impacts on the community during remedial actions. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment. Contaminant transport during excavation of the Lower Landfill and consolidation with the Upper Landfill and during cap construction would be minimized through appropriate methods such as dust control. Consolidation of the two Landfills and installation of a cap on the Upper Landfill would prevent the generation of additional leachate. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 7 to 9 years through natural degradation of contaminants in groundwater. Prevention of the potential for ingestion of groundwater would likely be attained following implementation of deed restrictions. However, excavating the Lower Landfill might create an environmental and public health threat as a result of runoff and air emissions. In light of the relatively low groundwater contamination at the Lower Landfill, excavation is not warranted.

o Implementability

There would be no construction or operation required for implementation of Alternative 1. Groundwater monitoring is a reliable method which would indicate changes in aquifer conditions. If the need for further action were identified through groundwater monitoring, the alternative evaluation and remedy selection process might need to be repeated for the Site. Sampling personnel, equipment, and an analytical laboratory would be readily available.

The cap and leachate collection system called for in Alternative 2 could be readily constructed and maintained. The air stripping system for leachate treatment could also be readily installed and operated. Diversion to the POTW via nearby sanitary sewer lines could also be readily constructed and maintained. Capping, leachate collection, air stripping, and treatment at a POTW (activated sludge) are reliable technologies. If additional remedial action were determined to be necessary, a groundwater extraction and treatment system could be designed and installed. Operation of the air stripping system could be readily extended if necessary. Discharge to the POTW could also be readily extended. The effectiveness of Alternative 2 could be readily monitored; groundwater monitoring would indicate changes in aquifer conditions, and discharge monitoring would indicate leachate treatment effectiveness. Coordination with the local government would be necessary to implement deed restrictions. Sampling equipment, sampling personnel, an analytical laboratory, construction equipment, cap materials, and an air stripping system would be expected to be readily available.

The cap and leachate collection system called for in Alternatives 3 through 6 could be readily constructed and maintained. The extraction system (Alternatives 3 through 5), air stripper (Alternatives 3 and 6), and chemical oxidation system (Alternative 4) could be readily constructed and operated. Capping, leachate collection, extraction, air stripping, and chemical oxidation are reliable technologies. If additional remedial action were determined to be necessary, the groundwater extraction system could be extended. Operation of the air stripper or chemical oxidation system could be readily extended if necessary. The effectiveness of Alternatives 3 through 6 could be readily monitored; groundwater monitoring would indicate changes in aquifer conditions, and discharge monitoring would indicate groundwater and leachate treatment effectiveness. Coordination with the local government would be necessary to implement deed restrictions. Sampling equipment, sampling personnel, an analytical laboratory, construction equipment, cap materials, and drillers would be expected to be readily available.

o Cost

The total present worth of the alternatives evaluated ranges from $111,446 (no action) to $10,893,000 (groundwater extraction and off-site treatment). Present worth considers a 5% discount rate, and a 30-year operational period. Only Alternative 1 would not require any capital costs. Alternative 2 is the least costly of the action alternatives ($4,352,078 - $4,644,183).

o State Acceptance

NYSDEC concurs with the selected remedy.

o Community Acceptance

One written comment regarding the selected remedy was received by EPA during the comment period. The one written comment and the comments received at the public meeting are addressed in the Responsiveness Summary. Neither the written comment nor the comments at the public meeting, however, raised substantive objections or concerns about the selected remedy. Therefore, EPA believes that the selected remedy has the support of the affected community.

THE SELECTED REMEDY

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, both EPA and NYSDEC have determined that Alternative 2, Option B, Multi-Media Cap on Both Landfills, Active Leachate Collection and discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant constitutes the appropriate remedy for the Site. If the Binghamton-Johnson City Joint Sewage Treatment Plant cannot accept the collected leachate, then Option A, on-site treatment, would be implemented in place of Option B. The major components of the selected remedy are as follows:

Containment through the installation of caps over the landfill material and leachate collection. The leachate would be treated at the Binghamton-Johnson City Joint Sewage Treatment Plant. If the Treatment Plant is not available, leachate would be treated on-site using air stripping and discharged to Carlin Creek.

The selected remedy also includes fencing, deed restrictions, and a groundwater monitoring program, which will provide data to evaluate the effectiveness of the remedial effort and will act as an early warning system to protect private wells in the area. Five-year reviews will be conducted as required by the NCP due to the fact that waste would remain on-site. The purpose of the five-year review is to ensure that the remedy continues to provide adequate protection of human health and the environment.

A multimedia cap will be considered for containment at this site, since it is more resistant to cracking due to settlement than asphalt and concrete. Clay was not chosen because it is not readily available locally. Capping will minimize surface water infiltration, provide for control of erosion, and isolate and contain certain wastes.

The multi-media cap will be consistent with applicable regulations that require that when a FML is used in place of clay, the FML may have a permeability no greater than 1×10^{-12} cm/sec. The design requirements contained in the 6 NYCRR Part 360 standards would be incorporated into the cap design.

The cap considered above would also attain the performance requirements for caps at hazardous waste landfills as specified in 40 CFR Part 264.310. These requirements, promulgated under the RCRA, specify that the cap should:

1. Provide long-term minimization of migration of liquids through the closed landfill;

2. Function with minimum maintenance;

3. Promote drainage and minimize erosion or abrasion of the cover;

4. Accommodate settling and subsidence so that the cap's integrity is maintained; and

5. Have a permeability less than or equal to the permeability of any bottom liner present or natural subsoils present.

The first RCRA performance requirement would be attained by establishing proper slopes for drainage of precipitation, vegetated topsoil to promote evapotranspiration, as well as the installation of a FML with a permeability of 1×10^{-12} cm/sec or less.

A minimum amount of maintenance would be required for the cap. Maintenance activities would primarily consist of periodic mowing.

Proper slopes and the vegetated topsoil would be established to promote drainage and minimize erosion of the cover.

It is expected that settling and subsidence have already occurred at the Site landfills due to their age and would not occur in the future to any substantial degree. However, FMLs as considered here typically accommodate settling satisfactorily.

The permeability of the natural subsoils beneath the landfills ranges from approximately 1.4×10^{-4} to 2.3×10^{-7} cm/sec at the Upper Landfill to approximately 6.0×10^{-3} to 4.3×10^{-4} cm/sec at the Lower Landfill. The 40 mil FML considered for the cap would have a permeability of no greater than 1×10^{-12} cm/sec. Therefore, the fifth RCRA performance requirement will be attained by the Part 360 design requirement.

Leachate collection systems will be installed in conjunction with the caps. A leachate collection system will be installed around the toe of each landfill and collected leachate will be discharged to the Binghamton-Johnson City Joint Sewage Treatment Plant, or if the Plant is not available, leachate would be treated on-site in an air stripper package treatment plant. At least two leachate collection wells will be installed at the Upper Landfill and will be connected to the leachate collection system.

The leachate collection wells will be drilled to the bottom of the fill material. It is anticipated that each well will have a deep and shallow well screen, with a removal seal or plug separating the deep and shallow screen zones. Initially, the shallow screened intervals will be pumped to remove leachate above the

groundwater table, which occurs at approximately 16 ft below the surface of the landfill. If the Upper screened intervals dry out, the plug separating the screened zones may be removed to allow pumping deeper within the fill beneath the groundwater table. This will ensure effective removal of the leachate and protection of human health and the environment.

A collection trench will be installed along the toe of the Lower Landfill. The bottom of the trench will be located at approximately the same elevation as the groundwater table, or at a depth sufficient to eliminate seeps in the wetland areas. The edge of the cap will be keyed into the outer edge of the collection trench.

Off-site treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant will involve discharging leachate into on-site sanitary sewer lines. Leachate collected at the Upper Landfill will be discharged into an 8-inch sanitary sewer located approximately 20 ft west of the Broome Parkway. Leachate collected at the Lower Landfill will be discharged into an 18-inch sanitary sewer located approximately 130 west of the northwest corner of the Lower Landfill. Effluent from the sewage treatment plant is discharged to the Susquehanna River.

If discharge to the Binghamton-Johnson City Sewage Treatment Plant is not possible, then leachate would be treated at an on-site treatment plant. The on-site treatment plant would be located adjacent to the Lower Landfill. Leachate from the Upper Landfill would be transported to the treatment system at the Lower Landfill through a gravity-flow pipe. Pretreatment for the removal of iron and manganese would likely be necessary. Treatability studies would be necessary during design to evaluate both system performance and potential fouling problems due to metal scaling and/or bacterial growth. The plant would be operated 24 hours per day until the leachate generation rate drops below a predetermined practical treatment rate. At that time, leachate would be temporarily stored on-site and then treated by the air stripper whenever sufficient quantities of leachate were accumulated. Treated effluent would be discharged to Carlin Creek.
Stripping is a physical treatment process in which air or steam is used to remove dissolved volatile organic compounds from water. Air stripping involves transferring a dissolved substance from the liquid phase to the gas phase whereas steam stripping is essentially a distillation process in which the volatile compounds are removed from the wastewater as distillate. An evaluation of the suitability of a stripper for treatment of a wastewater typically includes an evaluation of any treatment that may be needed for the air emissions which would be produced.

A wetlands delineation (utilizing the "three parameter method"), and a 500-year flood plain assessment will be undertaken during the remedial design phase. A Stage 1A cultural resources assessment has already been performed. A wetland assessment and restoration plan will be required for any wetlands impacted or disturbed by remedial activity.

REMEDIATION LEVELS

The purpose of this response action is to restore the groundwater underlying the Site to levels consistent with State and Federal ARARs, and to ensure protection of the air, and the ground and surface water in the vicinity of the Site from continued release of contaminated leachate.

The risk assessment concluded that the risk to human health or wildlife due to site-related exposure to ground water, landfill leachate, or surface water (sediments) is at the upper bounds of the acceptable risk range. However, certain compounds in the ground

...ater and leachate exceed New York State ...ass GA Ground Water Standards. Chloroethane, 1,2-dichloropropane, and xylene have been detected at concentrations above Class GA standards at the Upper Landfill. Xylene (7 ppb in 1990) has historically been below or just above the Class GA standard (5 ppb). The concentration of 1,2-dichloropropane (9 ppb in 1990) has been decreasing over the past four years and most recently was detected just above the Class GA standard (5 ppb). Chloroethane was observed at a concentration of 68 ppb in 1990. For the purpose of the study, chloroethane was considered the constituent of concern at the site.

STATUTORY DETERMINATIONS

Under its legal authorities, EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve ...rotection of human health and the ...nvironment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when completed, the selected remedial action for this site must comply with applicable or relevant and appropriate environmental standards established under federal and state environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. The following sections discuss how the selected remedy meets these statutory requirements.

PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy protects human health and the environment through containment of the landfill material and collection and treatment of leachate. The implementation of the selected remedy will not pose unacceptable short-term risks or cross-media impacts. Containment will be provided through caps installed over the landfill material. The multimedia capping system will limit infiltration of water by promoting controlled surface runoff and evapotranspiration. Natural degradation is expected to reduce the concentration of chloroethane to Class GA groundwater standards within approximately 7-9 years.

COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE STANDARDS

ARARs identified for the selected remedy include the New York State Class GA Ground Water Quality Standards (6 NYCRR Part 703), SPDES program requirements (6 NYCRR Part 750-758), New York State Ambient Water Quality Standards (6 NYCRR Part 701), the NAAQS for particulate matter (40 CFR Part 50), Solid Waste Management Facilities Landfill Closure and Post-Closure Criteria (6 NYCRR Part 360-2.15), freshwater wetlands requirements (6 NYCRR Part 663), air emissions and guidelines (6 NYCRR Part 212 and New York Air Guide-1) and guidelines establishing test procedures for the analysis of pollutants (40 CFR 136). The selected remedy will rely upon natural degradation for compliance with Class GA ground water standards; it is estimated that compliance will be achieved in approximately 7 to 9 years. Capping and leachate collection/treatment is expected to prevent future groundwater impacts from constituents of concern in landfill materials. Leachate will be treated to levels which, when discharged to the Susquehanna River (off-site treatment) or Carlin Creek (on-site treatment), will comply with SPDES

program requirements and will not cause contraventions of New York State Ambient Water Quality Criteria. Emissions from the air-stripper will be addressed as provided by New York Air Guide-1. Fugitive emissions during cap construction will be minimized through the use of dust suppressants and temporary cover, as needed, to comply with the NAAQS for particulates. Capping of the Site will be performed in compliance with New York State landfill closure and post-closure criteria (6 NYCRR Part 360-2.15). The use of EPA-certified Contract Laboratory Program analytical facilities will ensure that guidelines establishing test procedures for pollutant analysis will be complied with during the ground water monitoring program.

COST-EFFECTIVENESS

The selected remedy is cost-effective, since it provides overall effectiveness proportional to its cost. The estimated present worth cost for this remedy is $4,352,078. The total present worth of the alternatives evaluated ranged from $111,446 (no action) to $10,893,000 (groundwater extraction and off-site treatment). Present worth considers a 5% discount rate, and a 30-year operational period. Only Alternative 1 would not require any capital expenditures. Alternative 2, Option B is the least costly of the action alternatives ($4,352,078).

UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES TO THE MAXIMUM EXTENT PRACTICABLE

EPA and New York State have determined that the selected remedy represents the maximum extent to which permanent solutions and alternative treatment technologies can be utilized in a cost-effective manner for the Conklin Dumps Site. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA and NYSDEC have determined that the selected remedy best balances the goals of long-term effectiveness and permanence, reduction in toxicity, mobility, or volume achieved through treatment, short-term effectiveness, implementability, and cost-effectiveness, while also considering the statutory preference for treatment as a principal element and considering state and community acceptance.

The selected remedy will provide for long-term effectiveness and permanence. Capping and leachate collection would minimize the potential for the migration of constituents of concern from landfill materials to groundwater.

The selected remedy is also implementable. Both on-site treatment through air stripping and off-site treatment at a POTW are appropriate and dependable treatment methods for leachate. Natural degradation processes are expected to degrade the constituents of concern present in the aquifer to levels at or below New York State Class GA standards. The controls utilized in the selected remedy are both adequate and reliable. With appropriate maintenance, capping and leachate collection will be adequate and reliable containment measures for prevention of migration of constituents of concern from landfill materials. Air stripping will likely be an appropriate and dependable treatment method for leachate at the Site. Deed restrictions and fencing will be adequate and reliable in prohibiting well development and activities impacting cap integrity. Groundwater monitoring is a suitable and reliable means of following conditions in the aquifer and provides an early warning system to provide downgradient residential supply wells.

The selected remedy will be effective over the short-term. The alternatives do not differ significantly with respect to the ability to minimize impacts to the community during remedy installation. The natural degradation of contaminants in the groundwater provided by Alternative 2 is expected to result in a shorter

term attainment of groundwater standards than ould be the case for the alternatives utilizing groundwater extraction.

PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

The selected remedy addresses one of the principal threats posed by the site through the use of treatment technologies by treating the leachate at the Binghamton-Johnson City Joint Sewage Treatment Plant, or if the sewage treatment plant is not available, by on-site air stripping. The statutory preference for remedies that employ treatment as a principal element is only partially satisfied, however, since treatment of contaminated groundwater was not found to be practicable and since the size of the landfill, and the absence of on-site "hot spots" of contaminants, precluded excavation and treatment of fill material as a means of source control.

DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Site was released to the public on February 4, 1991. The Proposed Plan identified Alternative 2, Option B as the preferred alternative; stating further that, in the event that Option B is not feasible, then Option A, on-site treatment, would be implemented in place of Option B. EPA reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, EPA has determined that no significant changes to the selected remedy, as it was originally identified in the Proposed Plan, are necessary.

APPENDIX 1 - TABLES

List of Applicable or Relevant and Appropriate Requirements (ARARS) for the Selected Remedy

Groundwater

Regulatory Level	Description
State	New York State Groundwater Standards (6 NYCRR Part 703)
	Standards for Class GA Groundwater (6 NYCRR Part 703.5)
	New York State MCLs for Public Water Supplies (10 NYCRR Subpart 5-1)
Federal	Standards for Sources of Water Supply (10 NYCRR Part 170)
	Groundwater Monitoring (40 CFR Part 136)
	MCLs listed in the Safe Drinking Water Act (40 CFR Part 141)

Other

State	Capping in Place - Municipal Waste (6 NYCRR Part 360-2.15), 40 CFR 264.301(f), & 6 NYCRR Part 373-2.14(c)(6)
	Protection of Adjacent Wetlands (6 NYCRR Part 663)
	Treated Effluent Discharge to Surface Water (6 NYCRR Parts 701 and Parts 750-758)
	Air Emissions (6 NYCRR Part 212)
Federal	Site Air Quality During Remedial Activities (40 CFR Part 136)
	Ambient Air Standards (40 CFR 50)
	Regrading and Excavations (Waste Piles) (40 CFR 264.251(f)) & 6 NYCRR Part 373-2.214 (b)(6)

TABLE 18

GROUNDWATER - LOWER LANDFILL
SELECTED INORGANIC AND INDICATOR PARAMETER ANALYSES

PARAMETER, units Standard- See Exhibit B	Date	Well Number 5	6	7	8	9	10	18	21
Arsenic, mg/l	8/83	0.020	<0.01	<0.01	<0.01	<0.01	<0.01	--	--
NY Class GA Grndwater	9-11/83	0.01	0.08	0.07	0.08	<0.01	<0.01	--	--
Std = 0.025 mg/l	1984	<0.01	0.01	0.01	0.01	--	<0.01	<0.01	--
Arsenic-F, mg/l	1/86	<0.001	--	--	0.002	<0.001	<0.001	0.001	0.0012*
	4/86	--	--	--	--	--	--	--	<0.001
	1/88	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01*	<0.01
	6/90	0.0045	--	--	<0.003	0.0111	<0.003	--	--
Cadmium, mg/l	8/83	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--
NY/FED Std= 0.01 mg/l	11/83	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	--	--
	6/90	<0.003	--	--	<0.003	0.003	<0.003	--	--
Iron, mg/l	8/83	<0.01	2.4	<0.01	<0.01	<0.01	<0.01	--	--
NY/FED Std= 0.3 mg/l	11/83	0.02	38	7.80	10	0.03	0.07	--	--
Iron-F, mg/l	11/84	--	--	--	--	--	--	2.7	--
	1/86	0.05	--	--	5.7	<0.01	<0.01	0.86	1.09*
	4/86	--	--	--	--	--	--	--	0.61
	1/88	1.36	0.947	4.03	4.51	<0.10	<0.10	20.7*	8.06
Manganese, mg/l	8/83	1.40	2.80	4.10	4.40	1.70	3.30	--	--
NY/FED Std= 0.3 mg/l	11/83	1.9	4.1	4.3	4.8	2	2.3	--	--
Manganese-F, mg/l	11/84	--	--	--	--	--	--	4.1	--
	1/86	0.26	--	--	1.59	1.74	3.14	2.94	1.68*
	4/86	--	--	--	--	--	--	--	1.01
	1/88	3.32	3.67	2.77	1.33	1.14	4.78	5.72*	1.98
pH, s.u.	8/83	7.1	5.9	6.2	6.2	6.2	6.8	--	--
NY/FED Std= 6.5-8.5 SU	11/83	8.3	6.6	7.1	7.1	7	7.5	--	--
	11/84	--	--	--	--	--	--	6.2	--
	1/86	6.3	--	--	6.5	5.8	6.7	5.8	5.7*
	4/86	--	--	--	--	--	--	--	6.0
	1/88	5.7	7.4	7.1	5.8	7.2	7.1	6.7	7.5
	6/90	8.1	--	--	8	8.3	8.4	--	--
Conductivity, umhos/cm	8/83	190	140	90	90	90	100	--	--
	11/83	161	115	94	84	100	106	--	--
	11/84	--	--	--	--	--	--	170	--
	1/86	75	--	--	75	65	85	85	90*
	4/86	--	--	--	--	--	--	--	80
	1/88	110	90	80	95	80	100	170	80
	6/90	100	--	--	90	80	270	--	--
TOC, mg/l	8/83	--	--	--	--	--	--	--	--
	11/83	14	19	4	4	2	3	--	--
	11/84	--	--	--	--	--	--	139	--
	1/86	9	--	--	2	1	<1	12	91*
	4/86	--	--	--	--	--	--	--	6

(*) Average of two sample analyses.

TABLE 19

GROUNDWATER - LOWER LANDFILL
PURGEABLE PRIORITY POLLUTANTS ANALYSES SUMMARY

Well Number:	5*	6**	7***	8***	8(R)	9*	9(R)	10*	10(R)	18+	18(Dup)	21+	Blank	Blank	Blank	Blank	Blank
Sample Date:	1/88	1/88	1/88	1/88	6/90	1/88	6/90	1/88	6/90	1/88	1/88	1/88	1/88	6/90	6/90	6/90	6/90
														VBLK21	VBLK23	VBLK36	VBLK84
PARAMETER (Standard -See Exhibit B-)	Concentrations expressed as ug/l (ppb)																
1 Chloromethane (5 ug/l)	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10A	<10A	<10	<10	<10	<10	<10	<10
2 Bromomethane (5 ug/l)	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10A	<10A	<10	<10	<10	<10	<10	<10
3 Vinyl Chloride (5 ug/l#)	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10A	<10A	<10	<10	<10	<10	<10	<10
4 Chloroethane (5 ug/l)	<1	<10	<10	<1	<10	<10	<10	<10	<10	<10A	<10A	<10	<10	<10	<10	<10	<10
5 Methylene Chloride (50 ug/l)	<1	<5	<5	<1	<5	<5	3(J)	<5	<5	<5A	<5A	<5	<5	3(J)	<5	6	4(J)
6 Acetone (50 ug/l)		<10	<10		<10	<10	13	<10	11	<10A	<10A	<10	<10	8(J)	<10	<10	<10
7 Carbon Disulfide		<5	<5		<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
8 1,1-Dichloroethene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
9 1,1-Dichloroethane (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
10 1,2-Dichloroethene (5 ug/l total)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
11 Chloroform (100 ug/l##)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	1J	<5	<5	<5	<5
12 1,2-Dichloroethane (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
13 2-Butanone (50 ug/l)		<10	<10		<10	<10	<10	<10	<10	<10A	3JA	<10	4J	7(J)	<5	<5	<5
14 1,1,1-Trichloroethane (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
15 Carbon Tetrachloride	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
16 Vinyl Acetate (50 ug/l)		<10	<10		<10	<10	<10	<10	<10	<10A	<10A	<10	<10	<10	<10	<10	<10
17 Bromodichloromethane (100 ug/l##)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
18 1,2-Dichloropropane (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
19 c-1,3-Dichloropropene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
20 Trichloroethene (10 ug/l#)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
21 Dibromochloromethane (100 ug/l##)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
22 1,1,2-Trichloroethane (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
23 Benzene (5 ug/l#)	<1	<5	<5(6)	<1(	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
24 t-1,3-Dichloropropene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5A	<5A	<5	<5	<5	<5	<5	<5
25 2-Chloroethylvinylether (5 ug/l)	<10			<10													
26 Bromoform (100 ug/l##)	<10	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
27 4-Methyl-2-Pentanone (50 ug/l)		<10	<10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
28 2-Hexanone (50 ug/l)		<10	<10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
29 Tetrachloroethene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
30 1,1,2,2-Tetrachloroethane(5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
31 Toluene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	2J	<5	<5	<5	<5	<5	<5	<5
32 Chlorobenzene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
33 Ethylbenzene (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
34 Styrene (5 ug/l)		<5	<5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
35 Total Xylenes (5 ug/l)	<1	<5	<5	<1	<5	<5	<5	<5	<5	3J	<5	<5	<5	<5	<5	<5	<5

Previous analytical results, if different, are noted in brackets.

(+) NYSDOH Proposed Standards Limiting Organic Chemical Contamination in Drinking Water, unless noted.

(#) NYS Water Quality Standards for Class GA Waters

(##) NYS/FED MCL for sum of Total Trihalomethanes

(*) Previous sampling results from 8/83, 11/83 and 1/86 confirm the above results for 1/88.

(**) Previous sampling results from 8/83 and 11/83 confirm the above results for 1/88.

(***) Previous sampling results from 8/83 and 11/83 confirm the above results for 1/88, except for benzene.

(+) Previous sampling results from 1/86 confirm the above results for 1/88.

R Repeat analysis was performed as orginal did not meet spike recovery requirements for 1,2 Dichloroethane. Repeat results are reported.

A Holding time exceeded for analysis.

J Concentration detected is below detection limit.

K Surrogate % recovery outside QC/limits.

TABLE

GROUNDWATER - UPPER LANDFILL
PURGEABLE PRIORITY POLLUTANTS ANALYSES SUMMARY

Well Number:	1*	1	2**	3*	4*	4	11	11	11	11	11	12+	12	22+	36	37	38D	38D	38S	38S(R)	Blank	Blank	Blank
Sample Date:	1/88 Bkgd	6/90 Bkgd	1983	1/88	1/88	6/90	8/83	11/83	2/86	1/88	6/90	1/88	6/90	1/88	1/88 Bkgd	1/88	1/88	6/90	1/88	6/90	1/88	6/90 VBLK01	6/90 VBLK23
PARAMETER (Standard -See Exhibit B")	Concentrations expressed as ug/l (ppb)																						
1 Chloromethane (5 ug/l)	<10	<10	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2 Bromomethane (5 ug/l)	<10	<10	<1	<10	<10	<10	<10	2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
3 Vinyl Chloride (5 ug/l#)	<10	<10	<1	<10	<10	<10	16	1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
4 Chloroethane (5 ug/l)	<10	<10	<1	<10	<10	<10	5	18	63	170	68	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
5 Methylene Chloride (50 ug/l)	<5	5(B)	4(<1)	<5	<5	<5	2	32	1	2	<5	<1	4(B,J)	<1	<1	<1	<1	4(B,J)	<1	3(J)	<5	3(J)	<5
6 Acetone (50 ug/l)	<10	<10		<10	<10	<10	<10	<10	<10		<10		<10					<10		<10	<10	8(J)	<10
7 Carbon Disulfide	<5	<5		<5	<5	<5	<5	<5	<5		<5		<5					<5		<5	<5	<5	<5
8 1,1-Dichloroethene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
9 1,1-Dichloroethane (5 ug/l)	<5	<5	<1	<5K	<5K	<5K	26	150	210	44	4(J,X)	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
10 1,2-Dichloroethene (5 ug/l total)	<5	<5	<1	<5	<5	<5	<5	<5	1	4	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
11 Chloroform (100 ug/l##)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	1J	<5	<5
12 1,2-Dichloroethane (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	3	3	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
13 2-Butanone (50 ug/l)	<10	<10		<10	<10	<10	<10	<10	<10		<10		<10					<10		<10	4J	7(J)	<5
14 1,1,1-Trichloroethane (5 ug/l)	<5	<5	<1	<5	<5	<5	8	1	9	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
15 Carbon Tetrachloride	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
16 Vinyl Acetate (50 ug/l)	<10	<10		<10	<10	<10	<10	<10	<10		<10		<10					<10		<10	<10	<10	<10
17 Bromodichloromethane (100 ug/l##)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
18 1,2-Dichloropropane (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	40	43	34	9(X)	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
19 c-1,3-Dichloropropene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
20 Trichloroethene (10 ug/l#)	<5	<5	<1	<5	<5	<5	<5	1	2	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
21 Dibromochloromethane (100 ug/l##)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
22 1,1,2-Trichloroethane (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
23 Benzene (5 ug/l#)	<5	<5	2(<1)	<5(1)	<5	<5	<5	3	<5	2	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
24 t-1,3-Dichloropropene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
25 2-Chloroethylvinylether (5 ug/l)			<10							<10		<10		<10	<10	<10	<10		<10				
26 Bromoform (100 ug/l##)	<5	<5	<10	<5	<5	<5	<5	<5	<5	<10	<5	<10	<5	<10	<10	<10	<10	<5	<10	<5	<5	<5	<5
27 4-Methyl-2-Pentanone (50 ug/l)	<10	<10	<1	<10	<10	<10	<10	<10	<10		<10		<10					<10		<10	<10	<10	<10
28 2-Hexanone (50 ug/l)	<10	<10	<1	<10	<10	<10	<10	<10	<10		<10		<10					<10		<10	<10	<10	<10
29 Tetrachloroethene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
30 1,1,2,2-Tetrachloroethane(5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
31 Toluene (5 ug/l)	<5	<5	1(2)	<5	<5	<5	<5	110	40	3	<5	<1	<5	<1	<1	<1	2	<5	<1	<5	<5	<5	<5
32 Chlorobenzene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
33 Ethylbenzene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	1	<5	<1	<5	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5
34 Styrene (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	<5	<5		<5		<5					<5		<5	<5	<5	<5
35 Total Xylenes (5 ug/l)	<5	<5	<1	<5	<5	<5	<5	11	7	3	7	<1	<5	<1	<1	<1	<1	<5	<1	<5	<5	<5	<5.

Previous analytical results, if different, are noted in brackets.

(") NYSDOH Proposed Standards Limiting Organic Chemical Contamination in Drinking Water, unless otherwise noted.

(#) NYS Water Quality Standards for Class GA Waters

(##) NYS/FED MCL for sum of Total Trihalomethanes

(*) Previous sampling results from 8/83, 11/83 and 1/86 confirm the above results for 1/88.

(**) Results presented are based on two sampling events (8/83 and 11/83).

(+) Previous sampling results from 1/86 confirm the above results for 1/88.

R Repeat analysis was performed as original did not meet spike recovery requirements for 1,2 Dichloroethane. Repeat results are reported.

A Holding time exceeded for analysis.

J Concentration detected is below detection limit.

K Surrogate % recovery outside QC/limits.

B Constituent found in the blank.

X Mass Spectrum data does not meet EPA CLP criteria but compound presence is strongly suspected.

TABLE 21

LEACHATE CHARACTERIZATION DATA SUMMARY

		Lower Landfill				Upper Landfill					
Leachate Well Number:		13	13	15	15	14	14	14	14	16	16
Sample Date:		8/8/83	8/20/83	8/8/83	8/20/83	8/8/83	8/19/83	2/13/86	1/88	8/83	1/88
VOLATILE ORGANICS (Standard")	UNITS										
1 Chloromethane (5 ug/l)	ug/l	<1	<1	<1	<1	<1	2	<10	<10	<1	<1
2 Bromomethane (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
3 Vinyl Chloride (5 ug/l#)	ug/l	<1	<1	<1	<1	36	25	<10	<10	<1	<1
4 Chloroethane (5 ug/l)	ug/l	<1	<1	<1	<1	19	15	<10	<10	<1	1
5 Methylene Chloride (50 ug/l)	ug/l	<1	2	2	4	1600	2100	150	<10	4	<1
6 Acetone (50 ug/l)	ug/l							1500			
7 Carbon Disulfide	ug/l										
8 1,1-Dichloroethene (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
9 1,1-Dichloroethane (5 ug/l)	ug/l	<1	<1	<1	<1	62	80	<10	<10	<1	<1
10 1,2-Dichloroethene (5 ug/l total)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	4
11 Chloroform (100 ug/l##)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
12 1,2-Dichloroethane (5 ug/l)	ug/l	<1	<1	<1	<1	6	10	<10	<10	<1	<1
13 2-Butanone (50 ug/l)	ug/l										
14 1,1,1-Trichloroethane (5 ug/l)	ug/l	2	2	<1	<1	<1	<1	<10	<10	<1	2
15 Carbon Tetrachloride (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
16 Vinyl Acetate (50 ug/l)	ug/l										
17 Bromodichloromethane (100 ug/l##)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
18 1,2-Dichloropropane (5 ug/l)	ug/l	<1	<1	45	20	150	350	<10	<10	<1	<1
19 c-1,3-Dichloropropene (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
20 Trichloroethene (5 ug/l)	ug/l	<1	<1	<1	<1	23	23	<10	<10	<1	<1
21 Dibromochloromethane (100 ug/l##)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
22 1,1,2-Trichloroethane (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
23 Benzene (5 ug/l)	ug/l	2	<1	<1	<1	40	47	33	32	7	<1
24 t-1,3-Dichloropropene (5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
25 2-Chloroethylvinylether (5 ug/l)	ug/l	<10	<100	<10	<10	<10	<100	<100	<100	<100	<100
26 Bromoform (100 ug/l##)	ug/l	<10	<100	<10	<10	<10	<100	<100	<100	<100	<100
27 4-Methyl-2-Pentanone (50 ug/l)	ug/l										
28 2-Hexanone (50 ug/l)	ug/l										
29 Tetrachloroethene (5 ug/l)	ug/l	<1	<1	<1	<1	5	4	<10	<10	<1	<1
30 1,1,2,2-Tetrachloroethane(5 ug/l)	ug/l	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1
31 Toluene (5 ug/l)	ug/l	17	13	<1	1	1100	1200	1200	1400	8	<1
32 Chlorobenzene (5 ug/l)	ug/l	2	2	<1	<1	<1	<1	150	150	<1	<1
33 Ethylbenzene (5 ug/l)	ug/l	8	5	<1	<1	34	59	89	140	23	1
34 Styrene (5 ug/l)	ug/l										
35 Total Xylenes (5 ug/l)	ug/l	26	7	<1	<1	<1	160	190	300	40	3
SELECTED INORGANICS & INDICATORS											
36 Arsenic (0.025 mg/l#)	mg/l	<0.01	<0.01	<0.01	--	<0.01	<0.01	0.005	<0.01	<0.01	<0.01
37 Cadmium (0.01 mg/l#)	mg/l	--	--	--	--	--	--	--	0.02	--	<0.01
38 Iron (0.3 mg/l#)	mg/l	3.6	0.84	<0.01	0.03	190	640	6200	110	--	53
39 Manganese (0.3 mg/l#)	mg/l	16	15	7.2	15	110	120	16.2	1.2	0.8	3.4
40 pH (6.5-8.5 SU#)	s.u.	6.8	6.6	6.8	--	6	5.9	6.7	6.7	7.7	6.3
41 Sp. Conductance	umhos/cm	430	272	330	--	10342	11458	3300	2800	4586	550
42 Total Organic Carbon	mg/l	--	--	--	--	--	--	1760	32	--	320

See Exhibit A for listing of State and Federal Water Quality Standards
(") NYSDOH Standards Limiting Organic Chemical Contamination in Drinking Water, unless otherwise noted.
(#) NYS Water Quality Standards MCL or Maximum Allowable Concentration (MAC)
(##) MCL for sum of Total Trihalomethanes
(*) Average of two analyses performed 8/8/83 and 8/20/83.

Revised 12/13/90

APPENDIX 2 - FIGURES

FIGURE 3

HYDROGEOLOGIC CROSS SECTION

TOWN OF CONKLIN

UPPER & LOWER LANDFILLS

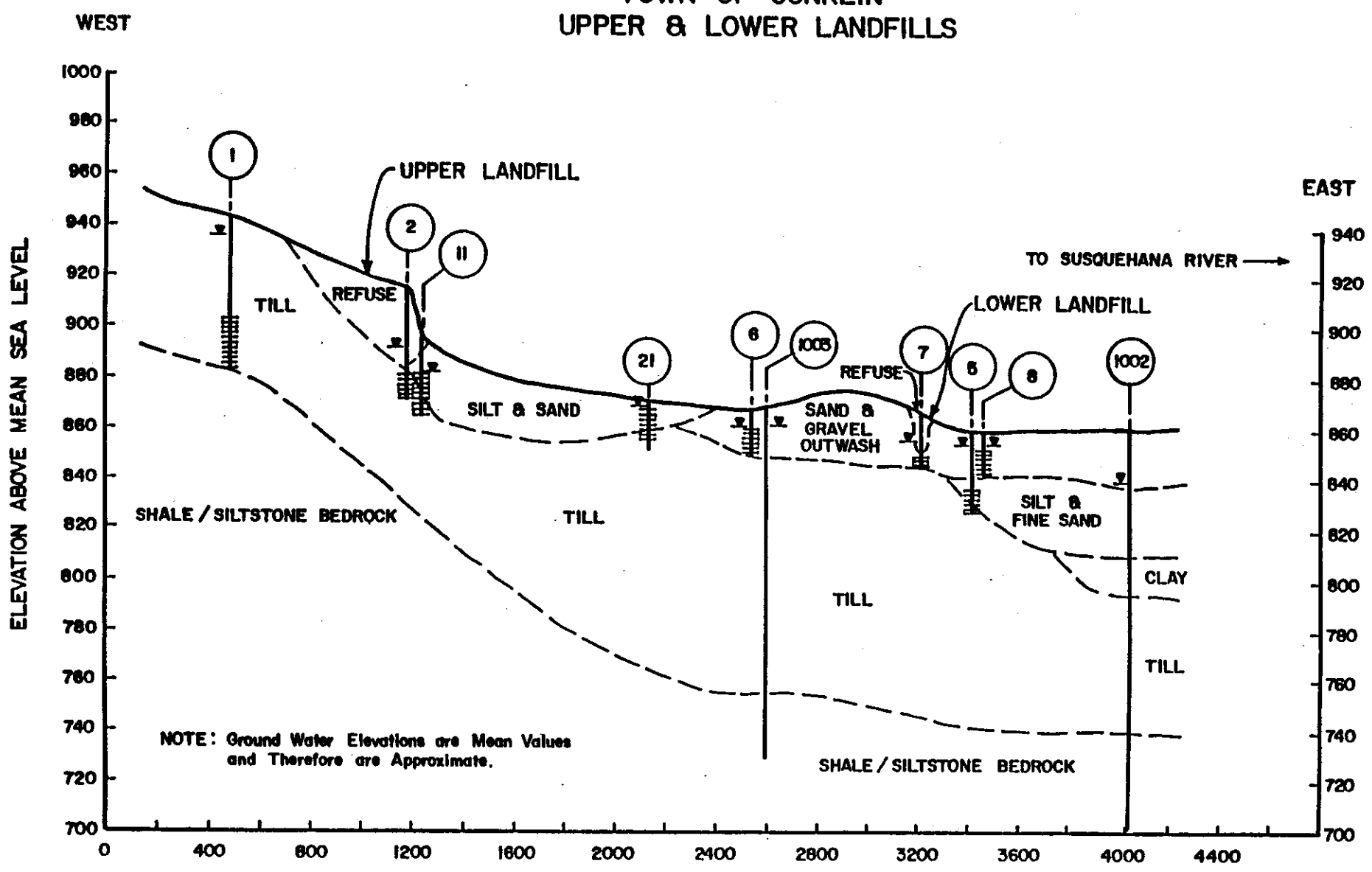
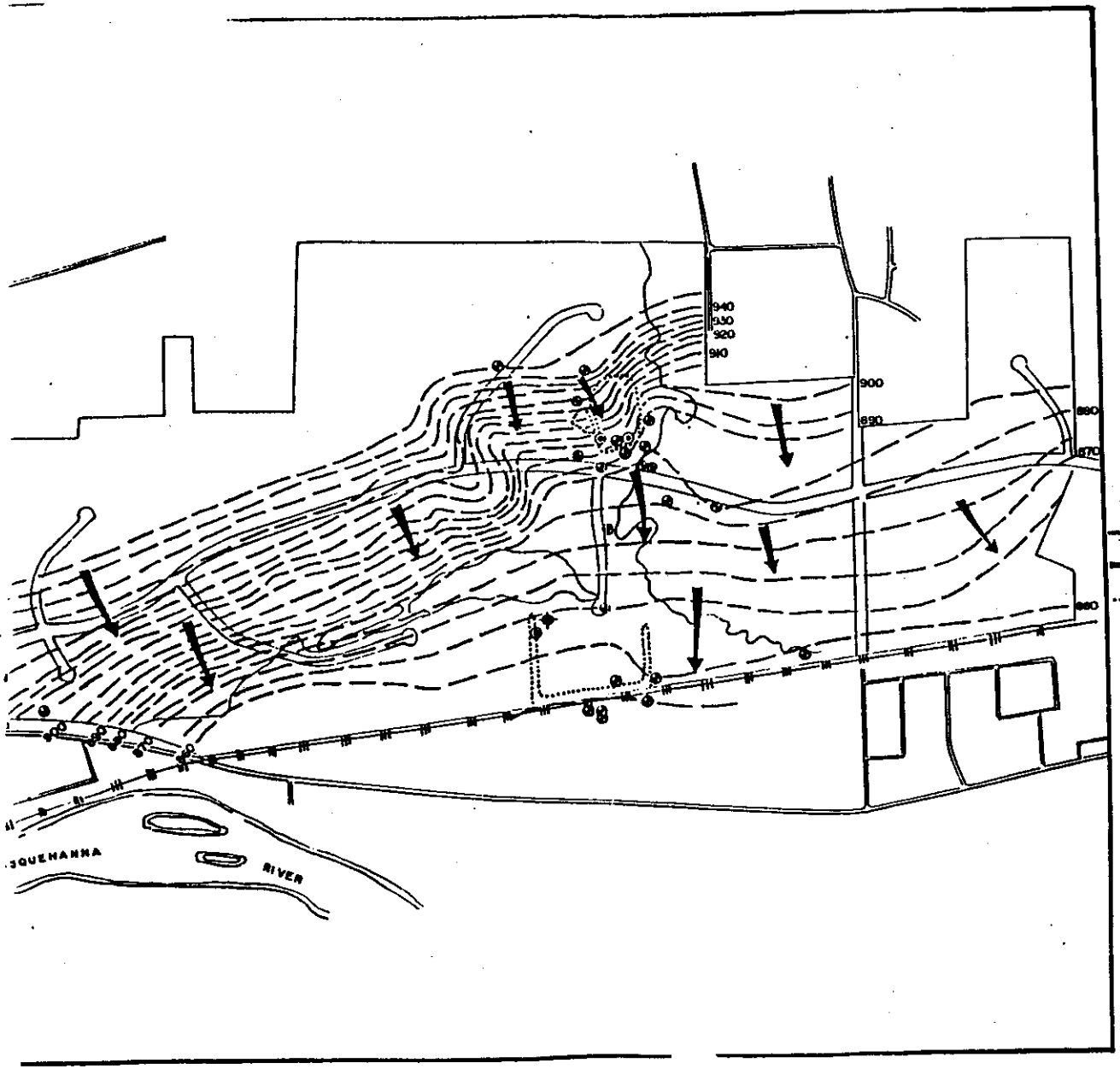


FIGURE 4



GROUNDWATER ELEVATION MAP

LEGEND

- GROUNDWATER MONITORING WE
- LEACHATE / METHANE GAS MONITORING WELL
- WELLS BY OTHERS
- GROUNDWATER EQUIPOTENTIAL LINE (DEC. 20, 1984)
- GROUNDWATER FLOW DIRECTIC
- APPROXIMATE LIMITS OF FILI

SCALE IN FEET

400 0 400 800

APPENDIX 3 - ADMINISTRATIVE RECORD

BOOZ·ALLEN & HAMILTON INC.

101 PARK AVENUE • NEW YORK, NY 10178 • TELEPHONE: (212) 697-1900 • FAX: (212) 697-2628 • TELEX: 620196

March 18, 1991

Conklin Town Hall
1271 Conklin Road
Conklin, New York 13748

Subject: Conklin Dumps Site, Administrative Record File

Dear Sir/Madam:

The Administrative Record File for the Conklin Dumps Site is being sent to you at the instruction of the U.S. Environmental Protection Agency. Please make this file available to the public for review.

Thank you for your assistance. If you have any questions, please contact Ms. Jennie Delcimento, Environmental Specialist, U.S. EPA, at (212) 264-8676, or Mr. Richard Ramon, Project Manager, U.S. EPA, at (212) 264-1336.

Very Truly Yours,

Eric Sean Goldstein
BOOZ, ALLEN & HAMILTON Inc.

Eric Sean Goldstein
Researcher

cc: Ms. Jennie Delcimento
Mr. Richard Ramon

CONKLIN DUMPS SITE
ADMINISTRATIVE RECORD FILE
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P. 1941 - 1943 Letter to Mr. Edward Murray, Broome County, from Mr. Joseph Forti, NYSDEC, Re: List of issues, August 6, 1985.

P. 1944 Letter to Ms. Lynn Wright, NYSDEC, from Mr. Joseph Forti, Re: Allowing work on the RI before the consent order, January 23, 1986.

P. 1945 - 1946 Letter to Mr. Robert Senior, NYSDEC, from Mr. Frank Hale, O'Brien and Gere, Re: Town of Conklin, January 21, 1986.

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P. 1976 Letter to Mr. Brian Davidson, NYSDEC, from Mr. Mark Gorgos, Coughlin & Gerhart, Re: Remedial investigation report, October 3, 1988.

P. 1977 Letter to Mr. Brian Davidson, NYSDEC, from Ms. Caroline Kwan, U.S. EPA, Re: RI report comments, October 11, 1988.

P. 1978 - 1982 Memorandum to Mr. Brian Davidson, NYSDEC, from Mr. W.J. Webster, NYSDEC, Re: Revised RI report, December 14, 1988. Attachments.

P. 1983 - 1984 Letter to Mr. Mark Gorgos, Coughlin and Gerhart, from Mr. Brian Davidson, NYSDEC, Re: Revised RI report, December 16, 1988.

P. 1985 - 1986 Letter to Mr. Brian Davidson, NYSDEC, from Mr. James Madigan, NYS Department of Health, Re: Comments on Final RI report, December 20, 1988.

P. 1987 - 1992 Memorandum to Mr. Arthur Fossa, NYSDEC, from Mr. Joseph Slack, NYSDEC, Re: Review of RI report, January 6, 1989. Attachments.

P. 1993 - 1994 Memorandum to Mr. Brian Davidson, NYSDEC, from Mr. Joe Kelleher, NYSDEC, Re: Revised Remedial investigation report, January 6, 1989. Attachments.

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P. 1997 Letter to Mr. Brian Davidson, NYSDEC, from Mr. James Madigan, NY State Department of Health, Re: Project status, January 24, 1989.

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P. 2000 - 2002 Letter to Mr. John Tomik, O'Brien & Gere, from Mr. Douglas Sheeley, NYTEST Environmental Inc., Re: Data Validation report, May 19, 1989.

P. 2003 Letter to Mr. Brian Davidson, NYSDEC, from Mr. John Tomik, O'Brien & Gere, Re: RI Report, June 5, 1989.

P. 2004 - 2005 Letter to Mr. John Tomik, O'Brien & Gere, from Mr. David Hill, OBG Laboratories Inc., Re: Comments made by NYTEST, June 16, 1989.

P. 2006 Memorandum to Ms. Maureen Serafini, NYSDEC, from Mr. Brian Davidson, NYSDEC, Re: Data validation report, July 6, 1989.

P. 2007 - 2009 Letter to Mr. John Tomlik, O' Brien & Gere, from Mr. Brian Davidson, Re: Town of Conklin landfills, August 22, 1989. Attachments.

P. 2010 Letter to Mr. Brian Davidson, NYSDEC, from Mr. Abram Miko Fayon, U.S. EPA, Re: RI/FS, October 25, 1989.

P. 2011 - 2012 Letter to Mr. Brian Davidson, NYSDEC, from Mr. Mark Gorgos, Coughlin & Gerhart, Re: RI/FS project and EQBA funding, January 31, 1990.

P. 2013 - 2014 Letter to Mr. Mark Gorgos, Coughlin and Gerhart, from Mr. Michael O'Toole, NYSDEC, Re: Town of Conklin Landfill, February 12, 1990.

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P. 2019 - 2022 Letter to Mr. Brian Davidson, NYSDEC, from Mr. John Tomlik, O' Brien & Gere, Re: RIFS, May 23, 1990. Attachments.

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P. 2025 Memorandum to Brian Davidson, NYSDEC, from Mr. Joseph Kelleher, NYSDEC, Re: Draft proposed plan, January 2, 1991.

P. 2026 - 2028 Letter to Mr. Joel Singerman, NYSDEC, from Mr. Robert Cozzy, NYSDEC, Re: Draft PRAP, January 4, 1991. Detailed assessment.

P. 2029 Letter to Mr. Brian Davidson, NYSDEC, from Mr. Paul Fox, O'Brien & Gere, Re: Enclosed copies of documents, January 11, 1991.

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P. 2035 Letter to Distribution, from Mr. Brian Davidson, NYSDEC, Re: Draft feasibility study, November 20, 1990.

P. 2036 Letter to Mr. Brian Davidson, NYSDEC, from Mr. John Tomlik, O'Brien & Gere, Re: Draft feasibility study, November 20, 1990.

P. 2037 Letter to Mr. Joel Singerman, U.S. EPA, from Mr. Brian Davidson, NYSDEC, Re: Draft feasibility study, November 28, 1990.

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P. 2059 - 2060 Memorandum to Mr. Joel Singerman, U.S. EPA, from Mr. William Lawler, U.S. EPA, Re: ARAR for FS, December 20, 1990.

P. 2061 - 2065 Letter to Mr. Bill Horrigan, Binghamton - Johnson City Joint Sewage Treatment Plant, from Mr. Paul Fox, O'Brien and Gere, Re: Feasibility of discharging leachate from the landfills, January 7, 1991. Attachments.

P. 2066 - 2067 Memorandum to Mr. Richard Ramon, U.S. EPA, and Mr. Raymond Werner, U.S. EPA, from Ms. Alison Devine, U.S. EPA, Re: Draft feasibility study and draft proposal plan, January 9, 1991.

P. 2068 Memorandum to Mr. Richard Ramon, U.S. EPA, from Mr. Stephen Gould, U.S. EPA, Re: Draft feasibility study, January 10, 1991.

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P. 2070 - 2071 Memorandum to Mr. William McCabe, U.S. EPA, from Mr. Andrew Bellina, U.S. EPA, Re: Branch review of the Draft Proposed Plan for the Conklin Dump Site, January 10, 1991.

P. 2072 - 2073 Memorandum to Mr. William McCabe, U.S. EPA, from Mr. Andrew Bellina, U.S. EPA, Re: Draft feasibility study, January 14, 1991.

P. 2074 Memorandum to Mr. Joel Singerman, U.S. EPA, from Mr. William Lawler, U.S. EPA, Re: Conklin dump site, January 16, 1991.

P. 2075 Memorandum to Mr. Richard Ramon, U.S. EPA, from Mr. Stephen Gould, U.S. EPA, Re: FS, January 17, 1991.

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P. 2077 Letter to Mr. Ronald Tramontano, New York State Department of Health, from Mr. Stephen Hammond, NYSDEC, Re: Final Proposed Plan, February 7, 1991.

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P. 2081 - 2082 Letter to Mr. Langdon Marsh, NYSDEC, from Mr. Carl Young, County Executive, Re: Broome County Corporate Park, October 9, 1985.

P. 2083 Letter to Mr. Brian Davidson, NYSDEC, from Ms. Caroline Kwan, U.S. EPA, Re: Transfer to Superfund, March 21, 1989.

P. 2084 Letter to Mr. Phillip Marks, Town of Conklin, from Mr. Brian Davidson, NYSDEC, Re: Amendment 1 to State Assistance contract, April 7, 1989.

P. 2085 - 2086 Memorandum to Mr. Richard Lynch, NYSDEC, from Mr. Michael O' Toole, NYSDEC, Re: Financial information, June 19, 1989.

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P. 2088 Letter to Mr. Stephen Hammond, NYSDEC, from Mr. Ronald Tramontano, New York State Department of Health, Re: Enforcement, February 14, 1991.

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P. 2089 - 2090 Letter to Mr. John Morelli, NYSDEC, from Ms. Patricia Ingraham, Broome County Department of Planning and Economic Development, Re: Meeting May 8th in Broome County, May 21, 1985.

P. 2091 Letter to Mr. John Morelli, NYSDEC, from Ms. Patricia Ingraham, Broome County Department of Planning and Economic Development, Re: Completion of EIS, May 24, 1985.

P. 2092 - 2094 Memorandum to Mr. David King, NYSDEC, from Mr. Charles Goddard, NYSDEC, Re: Conklin dump, May 30, 1985. Attachments.

P. 2095 - 2096 Letter to Mr. Langdon Marsh, NYSDEC, from Mr. John Guinan, County Executive, Re: Response to letter of May 7, June 6, 1985.

P. 2097 Memorandum to Mr. Ray Lupe, NYSDEC, from Mr. John Morelli, NYSDEC, Re: Consent orders, June 18, 1985.

P. 2098 - 2111 Memorandum to Mr. Langdon Marsh, NYSDEC, from Mr. Norman Nosenchuck, NYSDEC, Re: Negotiation of consent order, July 9, 1985. Attachments

P. 2112 - 2113 Memorandum to Mr. Langdon Marsh, NYSDEC, from Mr. Joseph Forti, NYSDEC, Re: Meeting on August 14, 1985, August 8, 1985.

P. 2114 Letter to Ms. Lynn Wright, U.S. EPA, from Mr. Joseph Forti, NYSDEC, Re: Consent order, January, 23, 1986.

P. 2115 - 2117 Letter to Mr. Joseph Forti, NYSDEC, from Mr. Barry Kogut, Bond, Schoeneck & King, Re: Draft consent order, June 6, 1986.

P. 2118 - 2119 Memorandum to Commissioner Williams, NYSDEC, from Mr. Joseph Forti, NYSDEC, Re; Proposed order on consent, June 8, 1987.

P. 2120 - 2122 Letter to Mr. Eric Schaaf, U.S. EPA, from Mr. David Engel, NYSDEC, Re: Conklin landfill site, June 18, 1987. Attachments.

P. 2123 Letter to Ms. Caroline Kwan, U.S. EPA, from Mr. Joseph Forti, NYSDEC, Re: Order of consent, August 3, 1987.

P. 2124 - 2125 Memorandum to Ms. Janice Corr, NYSDEC, from Mr. Dave Engel, NYSDEC, Re: Reimbursement of 75% of DEC settlement, August 31, 1987. Attachments

P. 2126 - 2129 Letter to Mr. Barry Kogut, Bond, Schoeneck & King, form Mr. Earl Barcomb, NYSDEC, Re: Order of Consent, November 13, 1987. Attachments.

P. 2130 - 2131 Letter to Mr. Mark Gorgos, Coughlin & Gerhart, from Mr. Michael O'Toole, NYSDEC, Re: Town of Conklin Landfills, February 12, 1990.

P. 2132 - 2133 Letter to Mr. Mark Gorgos, NYSDEC, from Mr. Michael O'Toole, NYSDEC, Re: Past disposal activities, April 25, 1990.

P. 2134 Letter to Mr. Michael O'Toole, NYSDEC, from Mr. Mark Gorgos, Coughlin & Gerhart, Re: Letter of April 25, April 26, 1990.

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P. 2138 - 2144 Letter to Mrs. Carol Osterhout, Town Clerk, from Mr. Brian Davidson, NYSDEC, Re: Citizen participation plan, May 9, 1989. Attachments.

P. 2145 Article "State calls dump hazardous, will keep funding cleanup." Binghamton Press, Page B-1, May 1, 1990.

P. 2146 Article "Conklin to meet with EPA on dump." Press and Sun Bulletin, Page 3, February 19, 1991.

P. 2147 Article "Conklin to air dump cleanup options today." Press & Sun Bulletin, Page 2B, February 25, 1991.

DOCUMENTATION OF OTHER PUBLIC MEETINGS

P. 2148 - 2149 Summary of Broome Corporate Park Meeting Regarding Environmental issues, August 14, 1985.

FACT SHEETS AND PRESS RELEASES

P. 2150 News Release: NYSDEC, Immediate release. Wednesday, June 17, 1987, Re: Conklin site.

APPENDIX 4 - NYSDEC LETTER OF CONCURRENCE

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233 - 7010

Thomas C. Jorling
Commissioner

Mr. Constantine Sidamon-Eristoff
Regional Administrator
United States Environmental
Protection Agency, Region II
26 Federal Plaza
New York, New York 10278

MAR 2 2 1991

Dear Mr. Sidamon-Eristoff:

RE: Conklin Landfills - Site No. 704013
Record of Decision

The New York State Department of Environmental Conservation has reviewed the Record of Decision for the Conklin Landfills and the Department concurs with the selection of Alternative 2 with Leachate Option B. Alternative 2 with Leachate Option B consists of a landfill cap with leachate collection at the Upper and Lower Landfills, leachate collection wells within the Upper Landfill, discharge of leachate to the sanitary sewer lines, treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant, groundwater monitoring, fencing and deed restrictions. The Department concurs that the Record of Decision adequately documents and justifies the selection of this remedy.

Should the discharge of leachate to the on-site sanitary sewer lines with treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant prove to be impractical, Alternative 2 with leachate Option A would then be implemented. Leachate Option A involves on-site treatment and discharge of treated water to Carlin Creek.

Furthermore, as is documented in the Record of Decision, this site will be subject to five year reviews as required by the Comprehensive Environmental Response, Compensation and Liability Act as amended by the Superfund Amendments and Reauthorization Act.

Sincerely,

Edward O. Sullivan
Deputy Commissioner

cc: K. Callahan, USEPA
G. Pavlou, USEPA
J. Singerman, USEPA

APPENDIX 5 - RESPONSIVENESS SUMMARY

RESPONSIVENESS SUMMARY

Prepared By: Brian H. Davidson
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation

Conklin Dumps Site Record of Decision - Site No. 704013

A Responsiveness Summary is required by Superfund policy. It provides a summary of citizens' comments and concerns received during the public comment period, and the New York State Department of Environmental Conservation's (NYSDEC) responses to those comments and concerns. All comments summarized in this document will be considered in NYSDEC's and the United States Environmental Protection Agency 's (USEPA) final decision for selection of a remedial alternative for the Conklin Dumps Site.

The public comment period on the Conklin Dumps Site Proposed Plan began on February 4, 1991. The Proposed Plan is attached in Appendix 5.1. A public meeting was held at the Conklin Town Hall at 7:00 pm on February 25, 1991. The public comment period and public meeting were announced in legal notices which appeared in the February 5, 1991 and February 22, 1991 Binghamton Press and Sun-Bulletin attached in Appendix 5.2. A press release was also issued by the NYSDEC, and newspaper articles appeared in the February 19, 1991 and February 25, 1991 Binghamton Press and Sun-Bulletin which provided information on the project and announced the public comment period and public meeting. Residents, interested public, and local officials listed on the contact list in the Citizen Participation Plan for the Conklin Dumps Site were mailed letters to encourage their participation and solicit their comments. The press release, newspaper articles, Citizen Participation Plan and a copy of the letter mailed to residents are attached in Appendix 5.3.

The public comment period closed on March 6, 1991. Attached in Appendix 5.4 is the transcript and attendance list from the public meeting. About 25 people attended the public meeting, including government officials and members of the press. A February 26, 1991 article in the Binghamton Press and Sun-Bulletin summarized the public meeting and is included in Appendix 5.3. The questions asked at the public meeting were adequately answered by the responses given at the public meeting and are included in the attached transcript.

The public meeting lasted about one hour and relatively few questions were raised. One concern that was raised regarded the derivation of the annual operating and maintenance cost estimates for

the preferred alternative. In response, it was noted that the operation and maintenance costs include leachate sampling, leachate treatment, five year reviews and an Insurance Fund and Reserve Fund which was estimated at 1 percent (1%) of the Direct Capital Cost. The Reserve Fund could be used to correct problems that could arise. The Reserve Fund may, in fact, not be needed at this site since there is one documented owner of the site (the Town of Conklin), who will be available to take care of any problems. The Insurance Fund will be used for liability insurance. Furthermore, cost estimates in feasibility studies generally assume an accuracy of plus 50 to minus 30 percent.

The other concerns raised at the meeting were primarily requests for clarification or further explanation. These concerns were addressed by NYSDEC and O'Brien and Gere personnel at the meeting and do not require further supplementation in the summary.

Written Comments

The only written comments received were from the Broome County Environmental Management Council (EMC), attached in Appendix 5.5. It is the opinion of the Broome County Environmental Management Council that the preferred alternative is protective of human health and the environment, and the EMC is in support of the feasibility study. The EMC feels that discharge to the on-site sanitary sewer lines and treatment at the Binghamton-Johnson City Joint Sewerage Treatment Plant can be supported, provided the following four conditions are met:

1. chemical composition and concentrations of leachate will not significantly increase over time;

2. organic constituents of the leachate will be effectively detoxified through the Publicly Owned Treatment Works (POTW) biodegradation treatment process (dilution is not an acceptable remedial treatment as it impacts the loading capacity of surface waters);

3. POTW sludge and discharges are not adversely impacted; and

4. storm conditions do not cause untreated leachate to be discharged to surface waters (i.e., the Susquehanna River).

Response

If leachate is discharged to the on-site sewer lines for treatment at the POTW, all of these conditions will be met. The chemical composition and concentrations of leachate will probably not significantly increase over time since the landfill has been closed for 16 years. Nevertheless, leachate will be sampled periodically. Extended dilution oxygen uptake inhibition testing has been performed, and additional testing will be performed to ensure that all the constituents of the leachate will be effectively detoxified through the

treatment plant treatment processes. Treatment plant sludge and discharges will be monitored. No adverse impact on sludge or discharges are anticipated. Storm conditions will not cause untreated leachate to be discharged to surface waters since the site will be capped and will include leachate collection systems.

It should be noted that leachate management Option A, on-site treatment, may be employed instead of leachate management Option B, even though all of the above conditions could be met. The USEPA, New York State Department of Health and NYSDEC concur that discharge of leachate to the on-site sanitary sewer lines and treatment at the POTW is the preferred leachate management option. However, the POTW, which is under the control of the Binghamton-Johnson City Sewerage Authority has no obligation to accept the leachate.

APPENDIX 5.1

RD

Superfund Proposed Plan

Conklin Dumps Site

Town of Conklin, Broome County, New York

FEB 4 1991

EPA Region 2 | February, 1991 | NYSDEC

PURPOSE OF PROPOSED PLAN

This Proposed Plan describes the remedial alternatives considered for the Conklin Dumps Superfund site and identifies the preferred remedial alternative with the rationale for this preference. The Proposed Plan was developed by the U.S. Environmental Protection Agency (EPA) in consultation with the New York State Department of Environmental Conservation (NYSDEC). EPA is issuing the Proposed Plan as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and Section 300.430(f) of the National Contingency Plan (NCP). The alternatives summarized here are described in the remedial investigation and feasibility study (RI/FS) report which should be consulted for a more detailed description of all the alternatives.

This Proposed Plan is being provided as a supplement to the RI/FS report to inform the public of EPA's and NYSDEC's preferred remedy and to solicit public comments pertaining to all the remedial alternatives evaluated, as well as the preferred alternative.

Changes to the preferred remedy or a change from the preferred remedy to another remedy may be made if public comments or additional data indicate that such a change will result in a more appropriate solution. The final decision regarding the selected remedy will be made after EPA has taken into consideration all public comments. We are soliciting public comment on all of the alternatives considered in the detailed analysis phase of the RI/FS because EPA and NYSDEC may select a remedy other than the preferred remedy.

Copies of the RI/FS report, Proposed Plan, and supporting documentation are available at the following repositories:

- Conklin Town Hall
  1271 Conklin Road
  Conklin, New York 13748
  Telephone: (607) 775-3454
  Hours: 9:00 am - 12:30 pm, 1:30 pm - 4:00 pm
  Monday - Friday

- New York State Department of Environmental Conservation
  50 Wolf Road, Room 222
  Albany, N.Y. 12233

- U.S. Environmental Protection Agency
  Emergency and Remedial Response Division
  26 Federal Plaza, Room 29-102
  New York, N.Y. 10278

COMMUNITY ROLE IN SELECTION PROCESS

EPA and NYSDEC rely on public input to ensure that the concerns of the community are considered in selecting an effective remedy for each Superfund site. To this end, the RI/FS report has been made available to the public for a public comment period which begins on February 4, 1991 and concludes on March 6, 1991.

Pursuant to Section 117(a) of CERCLA, a public meeting will be held during the public comment period at the Conklin Town Hall on February 25, 1991 at 7:00 p.m. to present the conclusions of the RI/FS, to further elaborate on the reasons for recommending the preferred remedial alternative, and to receive public comments.

Written and oral comments will be documented in the Responsiveness Summary Section of the Record of Decision (ROD), the document which formalizes the selection of the remedy.

All written comments should be addressed to:

Brian Davidson
Project Manager
New York State Department of Environmental Conservation
50 Wolf Road
Albany, N.Y. 12233

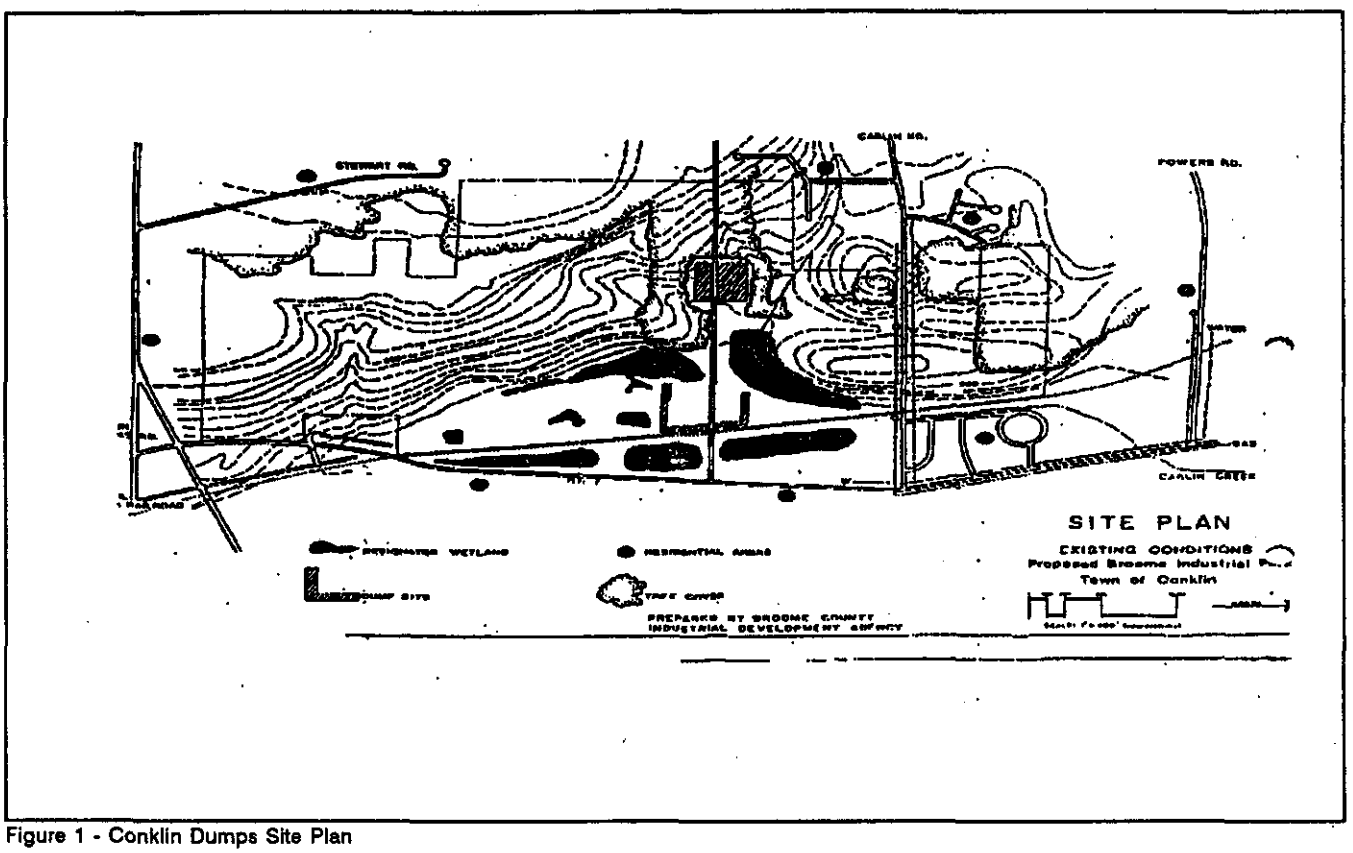

Figure 1 - Conklin Dumps Site Plan

SITE BACKGROUND

The Conklin Dumps site (see figure 1), located in the Town of Conklin in Broome County, New York, is situated in a sparsely populated area within the perimeter of the Broome Corporate Park in Broome County. The site consists of two inactive municipal landfills (an Upper and a Lower Landfill), both owned by the Town of Conklin. The Lower Landfill was operated by the Town of Conklin from 1964 to 1969. This landfill was used to dispose of municipal refuse, and is estimated to contain a total fill volume of approximately 25,000 cubic meters. The Lower Landfill is located in the floodplain of the Susquehanna River, about 0.5 miles to the east of the river. Designated wetlands surround a large portion of the Lower Landfill.

The Upper Landfill was operated by the Town of Conklin for the disposal of municipal wastes from 1969 until 1975, when a closure order was issued by the NYSDEC. The Upper Landfill is estimated to contain a total fill volume of approximately 55,000 cubic meters of waste material. There is no evidence that hazardous wastes were ever disposed of in the Lower Landfill. However, there is a preponderance of evidence that hazardous wastes were disposed of in the Upper Landfill. Also, the nature of contamination in the vicinity of well #11 is further evidence that hazardous wastes may have been disposed of in the Upper Landfill.

SITE HISTORY

In 1984, O'Brien and Gere Engineers, Inc. initiated a two phase hydrogeologic investigation of the Broome Corporate Park for the Broome Industrial Development Agency. The purpose of the investigation was to determine whether the Broome Corporate Park could be developed. A phase I hydrogeologic investigation was completed in March 1984. This investigation evaluated the potential for contamination and development limitations of the area. A Phase II hydrogeologic investigation was completed in February 1985. This investigation characterized the local hydrogeology and identified the hydrogeologic conditions that would affect development of the industrial park. The investigations identified the presence of leachate seeps from the site. In addition, groundwater monitoring wells located within the perimeter of the dumps indicated the presence of low levels of contaminants.

In 1985, a Work Plan for conducting an RI/FS was prepared and submitted to NYSDEC. The field investigations outlined in the approved Work Plan began in January 1986. In June 1986, the field efforts were completed, but negotiations between the Town and the State on the form of the Consent Order for funding of the project caused delays in finalizing the results of the investigations. Between November 1986 and June 1987, work was suspended pending the

renewal and completion of negotiations on the form of Consent Order. The site was listed on the National Priorities List (NPL) on March 30, 1989.

One requirement of the negotiated Consent Order was the preparation of a Preliminary Report. The Preliminary Report included a review of the data generated to date, and proposed supplemental studies for the characterization of the contamination at the site and revisions to the Work Plan. The RI Report was approved by NYSDEC on February 12, 1990, contingent upon the inclusion of additional groundwater sampling to obtain validated data at critical locations, methane monitoring, and field delineation of the wetlands in the vicinity of the Lower Landfill.

The required round of sampling was completed in June 1990. Groundwater samples from both the Upper and Lower Landfills were analyzed for volatile organics and selected metals.

Most of the contamination was found directly downgradient from the Upper Landfill in one well. Only inorganics were found in groundwater emanating from the Lower Landfill. Leachate emanating from both the Upper and Lower Landfills was found to contain detectable levels of volatile organics and inorganics.

SUMMARY OF SITE RISKS

A baseline health risk assessment was developed as part of the RI for the Conklin Dumps site. The risk assessment evaluates the potential impacts on human health and the environment at the site assuming that the contamination at the site is not remediated. This information is used to make a determination as to whether remediation of the site may be required.

The RI Report presented a detailed site specific risk assessment which addressed site conditions and exposures. The risk assessment qualitatively and quantitatively evaluated the hazards to human health and the environment at the Landfills. The qualitative analysis characterized the potential exposure pathways while the quantitative analysis determined the risk of the complete pathways.

The human exposure pathways were ingestion of groundwater and dermal contact with leachate. EPA considers risks in the range of 10^{-4} to 10^{-6} to be acceptable. This risk range can be interpreted to mean than an individual may have a one in ten thousand to a one in a million increased chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at the Site.

The quantitative assessment evaluated intentional ingestion of groundwater by humans and dermal contact with leachate by humans. It was determined, based on the evaluation of sample concentrations from the most recent sampling round (June 1990), that neither pathway posed an unacceptable health risk. Although the risks are in the acceptable range, State and Federal groundwater standards are being violated in the vicinity of well #11 (See figure 2), therefore remedial action is required.

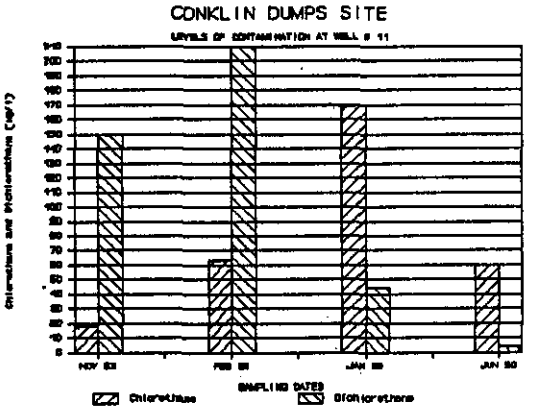

Figure 2 - Contamination Level at Well # 11

SUMMARY OF REMEDIAL ALTERNATIVES

CERCLA requires that each selected site remedy be protective of human health and the environment, be cost effective, comply with other statutory laws, and utilize permanent solutions and alternative treatment technologies and resource recovery alternatives to the maximum extent practicable. In addition, the statute includes a preference for the use of treatment as a principal element for the reduction of toxicity, mobility, or volume of the hazardous substances.

Remedial action objectives are specific goals to protect human health and the environment; they specify the contaminant(s) of concern, the exposure route(s), receptor(s), and acceptable contaminant level(s) for each exposure route. These objectives are based on available information and standards such as applicable or relevant and appropriate requirements (ARARs) and risk-based levels established in the risk assessment. The risk assessment concluded that the risk to human health due to site-related exposure to groundwater, landfill leachate, or surface water(sediments) was at the upper bounds (10^{-4}) for acceptable exposure levels. However, certain compounds in the groundwater and leachate exceed New York State Class GA Groundwater Standards which have been determined to be ARARs for the Site. Chloroethane, 1,2-dichloropropane, and xylene have been detected at

concentrations above Class GA standards at the Upper andfill. Xylene (7 ppb in 1990) has historically been below or just above the Class GA standard (5 ppb). The concentration of 1,2-dichloropropane (9 ppb in 1990) has been decreasing over the past four years and most recently was detected just above the Class GA standard (5 ppb). Chloroethane was observed at a concentration of 68 ppb in 1990. The recent Xylene and 1,2-dichloropropane concentrations are considered insignificant when compared to the standards (5 ppb).

The groundwater contamination is confined to a small area around Well # 11 (located at the toe of the upper landfill). It appears that due to the nature of the soil, no off-site migration of contaminated groundwater has occurred since the closure of the landfill.

Accordingly, the following remedial action objectives were established for the FS:

> Prevent ingestion of groundwater containing site-related constituents of concern (chloroethane) at concentrations significantly exceeding Class GA standards.
>
> Prevent the migration of constituents of concern from the landfill material that could result in groundwater concentrations above Class GA standards.
>
> Restore the aquifer to concentrations that meet Class GA standards for site-related constituents of concern (chloroethane).

Accordingly, the FS evaluates in detail, six remedial alternatives for addressing the contamination associated with the Conklin Dumps site.

These alternatives are:

Alternative 1: No Action

Capital Cost: none
O & M Cost: $15,000/yr
Present Worth Cost: $111,446
Time to Implement*: 7-9 years
* Assuming Natural Degradation

Alternative 1 is the no-action alternative. This alternative would provide for an assessment of the environmental conditions if no remedial actions are implemented. The no-action alternative would require implementation of a groundwater monitoring program. This program would be used to monitor groundwater conditions and provide a data base for future remedial actions which may be required. Five-year reviews would be conducted as required by the NCP due to the fact that the landfilled material would remain on-site. The purpose of the five-year reviews is to ensure that adequate protection of human health and the environment is maintained.

Alternative 1 would rely upon natural degradation of the constituent of concern (chloroethane) to reduce the concentration of chloroethane in the groundwater near Well #11 to below Class GA groundwater standards (5 ppb).

Alternative 2: Multi-Media Cap on Both Landfills, Active Leachate Collection and On-Site Treatment (Air Stripping) or Discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant

Time to Implement*: 7-9 years
* Assuming Natural Degradation

Option A: Leachate Wells at the Upper Landfill, Interceptor Trench at the Lower Landfill, and On-Site Treatment (Air Stripping)

Capital Cost: $3,256,773
O & M Cost: $92,901/yr
Present Worth Cost: $4,558,947

Option B: Leachate Wells at the Upper Landfill, Interceptor Trench at the Lower Landfill, and Discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant

Capital Cost: $3,145,703
O & M Cost: $86,669/yr
Present Worth Cost: $4,352,078

Option C: Interceptor Trenches at the Both Landfills, and On-Site Treatment (Air Stripping)

Capital Cost: $3,327,098
O & M Cost: $93,871/yr
Present Worth Cost: $4,644,183

Option D: Interceptor Trenches at Both Landfills, and Discharge to Binghamton-Johnson City Joint Sewage Treatment Plant

Capital Cost: $3,204,428
O & M Cost: $87,479/yr
Present Worth Cost: $4,423,255

This alternative would provide containment through the installation of caps over the landfill material and unlike the other alternatives, active leachate collection. Leachate would be treated on-site using air stripping, or at a nearby activated sludge sewage treatment plant (Binghamton-Johnson City Joint Sewage Treatment Plant). Treated effluent would be discharged to Carlin Creek under options A and C. Under options B and D,

leachate collected at the Landfills would be discharged into nearby sanitary sewer lines. Also included in Alternative 2 would be groundwater monitoring, fencing, deed restrictions, and five-year reviews as required by the NCP.

The landfills would be regraded as necessary prior to installation of the caps to establish slopes which would encourage runoff and minimize erosion. The caps would contain the landfill material and minimize infiltration of precipitation into the landfill material. This would minimize the potential for future contamination of the groundwater.

OPTIONS A and C

Air emissions would be in compliance with all applicable standards. Pre-treatment for removal of iron and manganese would likely be necessary. The on-site treatment plant would be located adjacent to the Lower Landfill. Leachate from the Upper Landfill would be transported to the treatment system at the Lower Landfill through a gravity-flow pipe. Treated effluent would be discharged to Carlin Creek. The treatment system would be operated 24 hours per day until the leachate generation rate drops below a predetermined practical treatment rate. At that time, leachate would be temporarily stored on-site and then treated by the air stripper whenever sufficient quantities were accumulated.

Alternative 2 would also rely upon natural degradation of chloroethane in excess of the Class GA groundwater standard in the groundwater in the vicinity of Well #11. Alternative process options potentially suitable for this alternative include: 1) use of an alternative landfill capping system; and 2) treatment of leachate through carbon adsorption. Special consideration may be necessary for capping the Lower Landfill since it is located in a flood plain.

Alternative 3: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gpd) and On-Site Treatment (Air Stripping)

Capital Cost: $3,392,130
O & M Cost: $111,468/yr
Present Worth Cost: $4,934,726
Time to Implement: 14-24 years

In addition to the actions comprising Alternative 2, Alternative 3 includes groundwater extraction and treatment.

The groundwater extraction system would remove impacted groundwater in the vicinity of Well #11 through two extraction wells. The extraction wells would be located between Well #11 and Wells #3 and #4. The pumping rate would be approximately 10,000 gpd per well. The groundwater extraction system would be operated 24 hours per day until such time that the concentration of chloroethane is at or below Class GA standards. The range of time required is estimated to be approximately 14 to 24 years. The groundwater extraction process would interfere with the natural degradation process since the dilution of contaminant levels would inhibit biological degradation of such contaminants by the microbes in the soil. Therefore, an active system of groundwater extraction will actually take longer than the passive process of natural degradation in attaining Class GA groundwater standards.

The groundwater and leachate treatment system (stripping) would be located at the Upper Landfill, adjacent to an extraction well. Leachate from the Lower Landfill would be either pumped up to the treatment system or temporarily stored and then transported by a tanker truck to the treatment system. The treatment system would be designed to achieve effluent limitations established pursuant to the requirements of the State Pollutant Discharge Elimination System (SPDES) program. Pretreatment for iron and manganese in the groundwater and leachate would be required to prevent fouling of the stripping system. A backwash system would also be incorporated into the stripper design so as to remove any fouling that might result from residual metals passing through the stripper. The treatment system would be operated 24 hours per day until the groundwater being extracted attained Class GA groundwater standards. At that time, leachate would be temporarily stored on-site and then treated by the air stripper whenever sufficient quantities were accumulated. Treated groundwater and leachate would be discharged to Carlin Creek.

Alternate technology process options potentially suitable for this alternative include: 1) groundwater extraction through subsurface drains; 2) groundwater and leachate treatment through activated carbon adsorption; and 3) use of an alternate landfill capping system.

Alternative 4: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gpd) and On-Site Treatment (Oxidation)

Capital Cost: $3,480,580
O & M Cost: $138,188/yr
Present Worth Cost: $5,113,678
Time to Implement: 14-24 years

Alternative 4 is the same as Alternative 3 except that Alternative 4 would utilize on-site treatment by chemical oxidation instead of air stripping. A leachate collection system would be installed around the toe of each

landfill and collected leachate would be treated with the groundwater. The groundwater extraction system would be as described in Alternative 3. Alternate technology process options potentially suitable for this alternative include: 1) groundwater extraction through subsurface drains; and 2) use of an alternate landfill capping system.

Alternative 5: Multi-Media Cap on Both Landfills, Leachate Collection, Groundwater Extraction (10,000 gpd) and Treatment Off-Site

Capital Cost: $3,237,850
O & M Cost: $619,140/yr
Present Worth Cost: $10,893,217
Time to Implement: 14-24 years

Alternative 5 is the same as Alternatives 3 and 4, except it would utilize off-site treatment.

The groundwater and leachate would be temporarily stored on-site and then transported to an approved facility for treatment and disposal. Approximately 40 tanker loads per week would be required during the period when both leachate and groundwater are being collected. Pump and treat operations would continue until the groundwater being extracted attained Class GA groundwater standards. At that time, only collected leachate would need to be transported to an approved facility for treatment and disposal.

Alternate technology process options potentially suitable for this alternative include: 1) groundwater extraction through subsurface drains; 2) use of an alternate landfill capping system; and 3) use of a deep well injection system or a sewage treatment plant for groundwater and leachate discharge.

Alternative 6: Consolidation of Both Landfills, Multi-Media Cap on Upper Landfill, Leachate Collection, and On-Site Treatment (Air Stripper)

Capital Cost: $3,800,794
O & M Cost: $100,405/yr
Present Worth Cost: $5,218,316
Time to Implement*: 7-9 years
* Assuming Natural Degradation

Alternative 6 would provide containment of the landfill materials through consolidation of the Lower Landfill material with the Upper Landfill material at the Upper Landfill site and the installation of a cap over the consolidated material. Leachate collection would be implemented at the Upper Landfill. Leachate would be treated on-site at the Upper Landfill using air stripping. Treated effluent would be discharged to Carlin Creek. Also included in Alternative 6 would be groundwater monitoring, fencing, deed restrictions and five-year reviews as required by the NCP.
This alternative would involve excavating the material in the Lower Landfill and transporting it to and placing it on the Upper Landfill. Samples of the Lower Landfill material would have to be analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) test to insure that the material is not hazardous. Any material deemed hazardous would have to be transported off-site to a RCRA facility for treatment and/or disposal. Additionally, dewatering of the landfill excavation would need to be performed in areas where the landfill material is located below the water table. It is assumed that the water would be managed as hazardous and would be transported to and disposed of at a RCRA facility.

Alternative 6 would rely upon natural degradation of chloroethane to reduce chloroethane levels to below Class GA standards in the groundwater in the vicinity of Well #11.

Alternative process options potentially suitable for this alternative include: 1) use of an alternative landfill capping system; 2) placing the Lower Landfill material in a commercial landfill; and 3) treatment of leachate through carbon adsorption.

PREFERRED ALTERNATIVE

Based upon an evaluation of the various alternatives, EPA and NYSDEC recommend Alternative 2, Option B, capping of the landfills, perimeter leachate collection systems, 3 leachate extraction wells at the Upper Landfill, and discharge Binghamton-Johnson City Joint Sewage Treatment Plant. The remedy also includes natural degradation of impacted groundwater, fencing of the landfills, deed restrictions, and groundwater monitoring as the preliminary choice for the Site remedy. If discharge to the Binghamton-Johnson City Joint Sewage Treatment Plant is not possible, then Option A would be the secondary choice for the site remedy. Option A is the same as Option B except that Option A involves on-site treatment (air-stripping).

The preferred alternative achieves the ARARs more quickly, or as quickly, and at less cost than the other options. Therefore, the preferred alternative will provide the best balance of trade-offs among alternatives with respect to the evaluating criteria. EPA and the NYSDEC believe that the preferred alternative will be protective of human health and the environment, will comply with ARARs, will be cost effective, and will utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. The remedy also will meet the statutory preference for the use of treatment as a principal element.

The preferred alternative is protective of human health and the environment, complies with federal and state equirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. However, since the contaminant source, the landfill itself, could not be effectively excavated and treated due to its large size and the absence of hot-spots representing major sources of contamination, none of the alternatives considered satisfied the statutory preference for treatment as a principal element of the remedy with respect to source control.

RATIONALE FOR SELECTION

During the detailed evaluation of remedial alternatives, each alternative is assessed against nine evaluation criteria, namely short-term effectiveness, long-term effectiveness and permanence, reduction of toxicity, mobility or volume, implementability, cost, compliance with applicable or relevant and appropriate requirements ("ARARs"), overall protection of human health and the environment, and state and community acceptance.

Alternative 1 (no action) would achieve the FS bjectives of preventing ingestion of contaminated groundwater and restoring the aquifer through deed restrictions and natural degradation, respectively. However, it would not prevent the potential for contaminant migration since future contamination of the groundwater would still be possible through the generation of leachate in the landfills that could enter the groundwater.

All of the remaining alternatives would achieve the remedial objectives as they all would employ both containment (capping) of the landfill material and some method of groundwater remediation. These methods include natural degradation, air stripping, and chemical oxidation. While air stripping and chemical oxidation would accomplish the same task as natural degradation, as explained above, extraction and treatment would take a longer time to achieve Class GA groundwater standards and would result in a higher remedial cost. Alternative 2 offers equal or better protection and is the least costly of the treatment alternatives. Alternative 2, Option B is the alternative which is recommended for implementation. Option A would be the second choice if a POTW is not available to accept the leachate.

'he evaluation criteria are noted below and explained below.

- Overall protection of human health and the environment addresses whether or not a remedy provides adequate protection and describes how risks posed through each exposure pathway (based on a reasonable maximum exposure scenario) are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

- Compliance with applicable or relevant and appropriate requirements (ARARs) addresses whether or not a remedy would meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental statutes and requirements or provide grounds for invoking a waiver.

- Long-term effectiveness and permanence refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met. It also addresses the magnitude and effectiveness of the measures that may be required to manage the risk posed by treatment residuals and/or untreated wastes.

- Reduction of toxicity, mobility, or volume through treatment is the anticipated performance of the treatment technologies, with respect to these parameters, a remedy may employ.

- Short-term effectiveness addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.

- Implementability is the technical and administrative feasibility of a remedy, including the availability of materials and services needed to implement a particular option.

- Cost includes estimated capital and operation and maintenance costs, and net present worth costs.

- State acceptance indicates whether, based on its review of the RI/FS and Proposed Plan, the State concurs with, opposes, or has no comment on the selected remedy at the present time.

- Community acceptance will be assessed in the Record of Decision (ROD) and refers to the public's general response to the alterna-

tives described in the Proposed Plan and the RI/FS reports.

A comparative analysis of these alternatives based upon the evaluation criteria noted above, is as follows:

o Overall Protection of Human Health and the Environment

Alternative 1 would provide for overall protection of human health and the environment through natural degradation of constituents of concern in the groundwater. Alternative 1 would not include capping of the landfill material or leachate collection. While natural degradation of constituents of concern in groundwater could be expected to occur, the potential would remain for future migration of constituents of concern from the landfill material.

Alternative 2 would provide for overall protection of human health and the environment with capping of landfill materials and active leachate collection to prevent migration of constituents of concern from landfill materials to groundwater, and deed restrictions to prohibit potable use of groundwater. Natural degradation of constituents of concern in the groundwater is expected to reduce concentrations of those constituents to groundwater standards in the short term.

Alternatives 3 through 6 would provide for overall protection of human health and the environment with capping of landfill materials and leachate collection to prevent migration of constituents of concern from landfill materials to groundwater, extraction and treatment of groundwater to reduce concentrations of constituents of concern in the aquifer to groundwater standards, and deed restrictions to prohibit potable use of groundwater.

o Compliance with ARARs

All technologies proposed for use in Alternatives 2 through 6 would be designed and implemented to satisfy all ARARs. Federal and State regulations dealing with the handling and transportation of hazardous wastes to an off-site treatment facility would be followed. The off-site treatment facility would be fully EPA-approved. RCRA wastes would be treated using specific technologies or specific treatment levels, as appropriate, to comply with land disposal restrictions.

o Long-Term Effectiveness and Permanence

Alternatives 2 through 6 would be equally effective over the long-term. Each of Alternatives 2 through 6 employ adequate and reliable controls to prevent future migration of constituents of concern from landfill materials to groundwater and reduce constituent concentrations in groundwater to Class GA groundwater standards. Alternative 1 would provide for reduction of constituent concentrations in groundwater to Class GA standards and employ an adequate and reliable control to monitor groundwater conditions, but would not provide for prevention of migration of constituents from landfill materials to groundwater.

o Reduction in Toxicity, Mobility, or Volume

Alternative 1 would not include the use of any treatment method. Concentrations of constituents of concern in groundwater would be expected to be reduced, however, through natural degradation processes in the aquifer.

Alternative 2 includes treatment of leachate with an on-site air stripper system (options A and C) or discharge to a POTW (options B and D), satisfying the statutory preference for treatment. Nearly complete removal of organic constituents in the leachate would be expected with air stripping. Air stripping is an irreversible treatment method. Further, concentrations of constituents of concern in groundwater would be expected to be reduced through natural degradation processes in the aquifer, and mobility of constituents of concern in the landfill materials would be reduced with capping and leachate collection.

Alternatives 3 and 6 would satisfy the statutory preference for treatment with the inclusion of air stripping of groundwater and leachate. Air stripping would provide for nearly complete destruction of volatile organics in groundwater and leachate. Air stripping is an irreversible treatment method. Minimal levels of residual constituents of concern in treated groundwater and leachate and in the aquifer would be further reduced through natural degradation processes. Further, a reduction in the mobility of constituents of concern in landfill materials would be expected with capping and leachate collection. Alternative 6 would provide an additional reduction in mobility through consolidation of Lower Landfill material at the Upper Landfill site.

Alternative 4 would satisfy the statutory preference for treatment with the inclusion of chemical oxidation of groundwater and leachate. Chemical oxidation would provide for nearly complete destruction of volatile organics in groundwater and leachate as would the off-site treatment that would be required under Alternative 5. Chemical oxidation is an irreversible treatment method. Minimal levels of residual constituents of concern in treated groundwater and leachate and in the aquifer would be further reduced through natural degradation processes. Further, a reduction in the mobility of constituents of concern in landfill materials

would be expected with capping and leachate collection.

o Short-Term Effectiveness

Although the remedial objective concerning prevention of migration of constituents from landfill materials to groundwater would not be achieved through Alternative 1, the remedial objectives related to prevention of ingestion of groundwater and the restoration of the aquifer to Class GA standards would likely be attained. Although it would be highly unlikely, the potential would exist for unrestricted installation of potable wells near the Site. Natural degradation processes are expected to reduce concentrations of constituents of concern to groundwater standards within approximately 7 to 9 years. Protection of workers during monitoring activities would be achieved through the use of appropriate protective equipment.

Alternative 2 would be effective over the short-term. There would be no short-term impacts on the community during remedial actions. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment. There would not be any environmental impacts during remediation; contaminant transport via fugitive missions during cap construction would be minimized through appropriate methods such as dust control. Installation of a cap would prevent generation of additional leachate. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 7 to 9 years through natural degradation. Prevention of ingestion of groundwater would likely be attained following implementation of deed restrictions.

Alternative 3 through 5 would be effective over the short-term. There would be no short-term impacts on the community environment during remedial actions. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment during remedial activities. Contaminant transport via fugitive emissions during cap construction would be minimized through appropriate methods such as dust control. Installation of a cap would prevent additional leachate generation. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 14 to 24 years through extraction and treatment of groundwater. The groundwater extraction process would interfere with the natural degradation process since the dilution of contaminant levels would inhibit biological degradation of such contaminants by the microbes in the soil. Therefore, an active system of groundwater extraction will actually take longer than the passive process of natural degradation in attaining Class GA groundwater standards. Prevention of the potential for ingestion of groundwater would likely be attained following implementation of deed restrictions.

Alternative 6 would be effective over the short-term. There would be no short-term impacts on the community during remedial actions. Protection of workers during remedial activities would be achieved through the use of appropriate protective equipment. Contaminant transport during excavation of the Lower Landfill and consolidation with the Upper Landfill and during cap construction would be minimized through appropriate methods such as dust control. Consolidation of the two Landfills and installation of a cap on the Upper Landfill would prevent the generation of additional leachate. Restoration of the aquifer to groundwater standards would likely be achieved within approximately 14 to 24 years through extraction and treatment of groundwater. As discussed above for alternative 3, the extraction system is anticipated to take a longer period of time than the natural degradation process in attaining Class GA standards. Prevention of the potential for ingestion of groundwater would likely be attained following implementation of deed restrictions. However, excavating the Lower Landfill may create an environmental and public threat as a result of runoff and air emissions. There is no indication of contaminated groundwater at the Lower Landfill and it is best left undisturbed.

o Implementability

There would be no construction or operation required for implementation of Alternative 1. Groundwater monitoring is a reliable method which would indicate changes in aquifer conditions. If the need for further action were identified through groundwater monitoring, the FS and Record of Decision (ROD) process may need to be repeated for the Site. Sampling personnel, equipment, and an analytical laboratory would be readily available.

The cap and leachate collection system in Alternative 2 could be readily constructed and maintained. The air stripping system for leachate treatment could also be readily installed and operated. Diversion to the POTW via nearby sanitary sewer lines could also be readily constructed and maintained. Capping, leachate collection, air stripping, and treatment at a POTW (activated sludge) are reliable technologies. If additional remedial action were determined to be necessary, a groundwater extraction and treatment system could be designed and installed. Operation of the air stripping system could be readily extended if necessary. Discharge to the POTW could also be readily extended. The effectiveness of Alternative 2 could be readily monitored; groundwater monitoring would indicate changes in aquifer conditions, and discharge monitoring would indicate leachate treatment effectiveness. Coordination with local government

would be necessary to implement deed restrictions. Sampling equipment, sampling personnel, an analytical laboratory, construction equipment, cap materials, and an air stripping system would be expected to be readily available.

The cap and leachate collection system in Alternatives 3 and 6 could be readily constructed and maintained. The extraction system and air stripper could be readily constructed and operated. Capping, leachate collection, extraction, and air stripping are reliable technologies. If additional remedial action were determined to be necessary, the groundwater extraction system could be extended. Operation of the air stripper could be readily extended if necessary. The effectiveness of Alternatives 3 and 6 could be readily monitored; groundwater monitoring would indicate changes in aquifer conditions, and discharge monitoring would indicate groundwater and leachate treatment effectiveness. Coordination with local government would be necessary to implement deed restrictions. Sampling equipment, sampling personnel, an analytical laboratory, construction equipment, cap materials, and drillers would be expected to be readily available. The air stripping technology should be readily obtainable.

The cap and leachate collection system in Alternative 4 could be readily constructed and maintained. The extraction system and chemical oxidation system could be readily constructed and operated. Capping, leachate collection, extraction, and chemical oxidation are reliable technologies. If additional remedial action were determined to be necessary, the groundwater extraction system could be extended. Operation of the chemical oxidation system could be readily extended if necessary. The effectiveness of Alternative 4 could be readily monitored; groundwater monitoring would indicate changes in aquifer conditions, and discharge monitoring would indicate groundwater and leachate treatment effectiveness. Coordination with local government would be necessary to implement deed restrictions. Sampling equipment, sampling personnel, an analytical laboratory, construction equipment, cap materials, and drillers would be expected to be readily available. The chemical oxidation technology should be readily obtainable.

o Cost

The total present worth of the alternatives evaluated ranged from $111,446 (no action) to $10,893,000 (groundwater extraction and off-site treatment). Present worth considers a 5% discount rate, and a 30-year operational period. Only Alternative 1 would not require any capital costs. Alternative 2 is the least costly of the action alternatives ($4,352,078 - $4,644,183). Even assuming that natural degradation will not be affected by pumping groundwater in alternatives 3 - 6, alternative 2 is still the least costly of the action alternatives.

o State Acceptance

NYSDEC concurs with the preferred alternative.

o Community Acceptance

Community acceptance of the preferred alternative will be assessed in the ROD following review of the public comments received on the RI/FS report and the Proposed Plan.

CONCLUSION

Based on information currently available, EPA and NYSDEC believe that the preferred remedy described above is fully protective of human health and the environment, meets all the ARARs, offers the best balance among the evaluation criteria discussed above and justifies the statutory preference for treatment as a principal element in remedy selection.

It is important to note that the remedy described above is the preferred remedy for the Site. The final selection will be documented in the ROD only after consideration of all comments on any of the remedial alternatives addressed in the Proposed Plan and the RI/FS report.

APPENDIX 5.2

Notice of Public Comment Period
and Public Meeting by the New York State
Department of Environmental Conservation

Notice is hereby given that at the time and place designated below the New York State Department of Environmental Conservation (NYSDEC) will be holding a public meeting to solicit public comments on remedial alternatives for the Conklin Dumps Inactive Hazardous Waste Site (#704013) located within the perimeter of the Broome Corporate Industrial Park south of Powers Road and approximately one mile north of the Kirkwood Interchange of Interstate Route 81 in the Town of Conklin. Written comments will be accepted during a public comment period that began on February 4, 1991 and will continue until March 6, 1991.

The Conklin Dumps consist of two (2) landfilled areas totaling about 8.4 acres, referred to as the Upper and Lower Landfills. The Lower Landfill was operated between 1964 and 1969 and contains approximately 25,000 cubic yards of wastes. It is believed that only municipal solid waste was disposed of in the Lower Landfill. The Upper Landfill contains approximately 55,000 cubic yards of waste. It is believed that some industrial wastes were codisposed with municipal solid waste in the Upper Landfill. The Landfills are owned and were operated by the Town of Conklin. In 1975, a closure order was issued by the NYSDEC.

A two phase hydrogeologic investigation was completed by O'Brien and Gere Engineers for the Broome County Industrial Development Agency in 1984 and 1985. Additional field work was performed in 1986, and in June 1986 the site was nominated for the National Priority List (NPL). In June 1987, a Consent Order was signed between the Town of Conklin and the NYSDEC which required a Remedial Investigation and Feasibility (RI/FS) to be performed on the Conklin Dumps site. The Consent Order also requires that the remedial measures agreed upon after completion of the RI/FS be implemented at the site.

The Remedial Investigation (RI) was completed in December 1988. The RI concluded that presently the landfills do not pose an unacceptable risk to human health or wildlife. The RI also indicated only very limited groundwater contamination in the immediate vicinity of the Upper Landfill. Confirmatory sampling, performed in June 1990, confirmed the RI findings and provided additional data validated data. A methane gas survey, also performed in June 1990, indicated no methane gas at either landfill.

The Feasibility Study (FS) which evaluates remedial alternatives for the site was completed in January 1991. The FS Report evaluated the six (6) following alternatives for the site:

- Alternative 1 - no action alternative - groundwater monitoring and five year reviews.
- Alternative 2 - Cap both landfills, perimeter leachate collection, monitoring, fencing, deed restrictions, and four options for enhanced leachate collection and treatment:
  - Leachate Option A - Three leachate extraction wells within the Upper Landfill with on site treatment, discharge to Carlin Creek.
  - Leachate Option B - Three leachate extraction wells within the Upper Landfill with discharge to the sanitary sewer lines and treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant.
  - Leachate Option C - A downgradient interceptor trench at the Upper Landfill with on site treatment, discharge to Carlin Creek.
  - Leachate Option D - A downgradient interceptor trench at the Upper Landfill with discharge to the sanitary sewer lines and treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant.
- Alternative 3 - Cap both landfills, perimeter leachate collection, collection of groundwater through two extraction wells immediately downgradient of the Upper landfill, treat by air stripping, discharge to Carlin Creek.
- Alternative 4 - Cap both landfills, perimeter leachate collection, collection of groundwater through two extraction wells immediately downgradient of the Upper landfill treatment by chemical oxidation at Upper Landfill.
- Alternative 5 - Cap both landfills, perimeter leachate collection, collection of groundwater through two extraction wells and off-site treatment of collected groundwater and leachate at a RCRA facility.
- Alternative 6 - Consolidation of the Upper and Lower Landfills at the Upper Landfill, a cap, perimeter leachate collection, air stripping and discharge to Carlin Creek.

The FS Report recommends that Alternative 2 with Leachate Option B above be implemented.

If discharge of leachate to the sanitary sewer lines and treatment at the Binghamton-Johnson City Joint Sewage Treatment Plant is not possible, then it is recommended that Alternative 2 with leachate Option A be implemented.

The United States Environmental Protection Agency (USEPA) in consultation with the NYSDEC, has recently issued a Proposed Plan for the Conklin Dumps site as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, and Section 300.430(f) of the National Contingency Plan (NCP). The Proposed Plan summarizes the findings of the RI/FS. The administrative record file, which contains the information upon which the selection of the remedial response action will be based, is available at the following location:

Conklin Town Hall
1271 Conklin Road
Conklin, New York
Telephone: 607-775-3454
Hours: 9:00 am - 12:30 pm, 1:30 pm - 4:00 pm
Monday - Friday

The Proposed Plan, the RI Report, FS Report and other reports generated on the Conklin site are also available for public review at the NYSDEC offices in Kirkwood and Albany and the USEPA Region II office in New York City.

Location of Public Meeting	Date and Time
Conklin Town Hall 1271 Conklin Road Conklin, New York	February 25, 1991 7:00 pm

Written and oral comments will be documented in the Responsiveness Summary Section of the Record of Decision (ROD), the document which formalizes the selection of the remedy.

Written comments should be sent to:

Mr. Brian Davidson
Project Manager
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road - Room 222
Albany, New York 12233-7010

APPENDIX 5.3

News Release Region 7

New York State Department of Environmental Conservation

THOMAS C. JORLING, *Commissioner*
WILLIAM KRICHBAUM, *Regional Director*

615 Erie Boulevard West
Syracuse, New York 13204

February 4, 1991

PRESS ADVISORY/BACKGROUND

The New York State Department of Environmental Conservation will conduct an information meeting on February 25th at 7:00 p.m. to update local citizens on clean up plans for the Conklin Landfills. The meeting will be held at the Conklin Town Hall, 1271 Conklin Road. The meeting is one part of the effort to solicit public comment on a proposed remedial plan for the site. The DEC will also receive written comments from now until March 6th.

The purpose of this public review period and the informational meeting is to present the results of a comprehensive Remedial Investigation and Feasibility Study (RI/FS) conducted under the supervision of both the State DEC and the U.S. Environmental Protection Agency. The RI/FS was completed by O'Brien & Gere Engineers, which was hired by the Town of Conklin, owner and former operator of both landfills.

The two landfills (Upper and Lower) are located on approximately 8 1/2 acres within the perimeter of the Broome Corporate Industrial Park south of Powers Road and approximately one mile north of the Kirkwood Interchange of Interstate Route 81. The Lower Landfill was operated by the Town between 1964 and 1969 and contains about 25,000 cubic

yards of municipal waste. The Upper Landfill contains more than 55,000 cubic yards of municipal waste and some industrial waste. The Landfills were closed in 1975 under an order issued by the DEC.

O'Brien & Gere began investigation of the site in 1984 for the Broome County Industrial Development Agency. After field work conducted in 1986, the site was nominated for the National Priority List (Superfund List). In June 1987 the Town of Conklin signed a Consent Order with the State DEC which required the Town to complete a RI/FS and to implement the remedial measures agreed upon after those studies. Those studies are now complete and remedial measures to contain the sites and remove contaminated leachate from the area are recommended. Seepage from the site contains detectable levels of volatile organics and inorganics which have leached into groundwater directly downgrade of the landfills.

Based on the data presented in the RI/FS and recent confirmatory sampling and methane testing, the EPA has prepared a Proposed Remedial Action Plan (PRAP). The PRAP calls for capping both landfills, collecting the leachate and discharging to the nearby sanitary sewer lines

connecting to the Binghamton-Johnson City Joint Sewage Treatment Plant. This plan also calls for fencing the landfills and monitoring groundwater at the site.

The clean up will be the responsiblity of the Town of Conklin as owner/operators of the landfills. The Town will receive reimbursement from the State for 75% of their costs. The State funds are from the voter-approved 1986 Environmental Quality Bond Act. The cost of the remediation is estimated at more than $4 million.

This remedial plan is subject to change based on comments by the public during the next thirty days. The RI/FS, the Proposed Remedial Action Plan, and supporting data are available for review at the Conklin Town Hall from 9 a.m. to 12:30 and 1:30 to 4:00 p.m. Monday through Friday. Copies are also available for review at the DEC sub-office in Kirkwood. Written comments should be sent to:

Brian Davidson, Project Manager
Division of Hazardous Waste Remediation
NYS DEC
50 Wolf Road, Room 222
Albany, New York 12233-7010

For additional information contact Kate Lacey, Regional Citizen Participation Specialist, (315) 426-7400.

Timothy M. O'Hearn
To meet with DEC also

2/10/91

Conklin to meet with EPA on dump

By E[illegible] LAU
Staff Writer

Seven years after engineers found evidence of hazardous waste in two old Conklin town dumps, state and federal authorities are ready to tell cleanup.

Cleanup options will be described during a public meeting scheduled for 7 p.m. Monday in the Conklin Town Hall.

The state Department of Environmental Conservation and federal Environmental Protection Agency recommend a $4.3 million plan that involves sealing the landfill

See CONKLIN Page 4B

Conklin —

Continued from Page 1B

surfaces with impermeable caps, collecting runoff leachate and discharging it to the public sewer.

Three-quarters of the [illegible] may be paid by the state through the 1986 Environmental Quality Bond Act. The Town of Conklin is responsible for paying the other quarter.

Because the town has been expecting the expense and made arrangements to meet it, town Supervisor Timothy M. O'Hearn said taxpayers will be affected minimally. "I don't see this as having no effect whatsoever on the tax rate," he said.

Under an agreement forged with Broome County when the county began developing Broome Corporate Park in Conklin, the town may borrow up to $[illegible] million to clean the dumps. The loan is to be repaid only out of net profits from tax revenues collected by the town from corporate park tenants. The two dumps are roughly in the center of the corporate park.

Still, O'Hearn said, it is difficult to watch money being funneled away from other town uses, such as improving and expanding sewer and water [illegible].

The town has spent more than $216,400 in engineering and legal expenses, according to figures from town Bookkeeper Jean R. W[illegible]. The town has been reimbursed $[illegible] through the state bond act.

The two dumps sit on about [illegible] acres south of Powers Road and [illegible] of Conklin Forks Road. The Lower Landfill was used by the town from [illegible] to 1969, and the Upper Landfill from [illegible] to 1975. The two are believed to contain 67,000 cubic meters of garbage.

Ground water contamination was [illegible] in 1984 during a [illegible] done as a prelude to developing Broome Corporate Park. Subsequent studies by O'Brien and Gere Engineers Inc. of Syracuse found [illegible] [illegible] two chemical solvents and two toxic metals that exceed state or federal ground water standards.

The main contaminant is chloroethane found at a concentration of 67 parts per billion last June. The ground water standard is 5 parts per billion.

The contamination is not believed to affect drinking water. A class-action suit filed against the town in 1985 by 32 homeowners near the landfill who feared their private wells were polluted was settled two years later for $[illegible] and guaranteed access to public water.

The Syracuse engineers' studies over the years have shown the contamination is naturally dissipating. Town Attorney Mark S. Gorgos said this leaves town officials tempted to opt for the simplest and cheapest cleanup option: to monitor the ground water over the next seven to nine years while the hazardous chemicals naturally degrade.

Documents on the landfills are available for public review at the town hall at 12[illegible] Conklin Road, which is open weekdays from 9 a.m. to 12:30 p.m. and 1:30 p.m. to 4 p.m. Comments may be made in person at Monday's meeting or sent in writing to Brian Davidson, project manager

Conklin to air dump cleanup options today

By EDIE LAU
Staff Writer

Options for cleaning two old dumps in Conklin containing hazardous waste will be aired at a public meeting 7 p.m. today in Conklin Town Hall.

The state Department of Environmental Conservation and federal Environmental Protection Agency recommend a $4.3 million plan that involves sealing the landfill surfaces with impermeable caps, collecting landfill leachate and discharging it to the public sewer.

Three-quarters of the bill may be paid by the state 1986 Environmental Quality Bond Act. The Town of Conklin is responsible for the balance.

The dumps sit on about 8.5 acres off Route 7 between Powers and Conklin Forks roads in Broome Corporate Park. The Lower Landfill was used by the town from 1964 to 1969, and the Upper Landfill, from 1969 to 1975. The main contaminant has been identified as chloroethane, the product of an industrial solvent, trichloroethane, breaking down.

The simplest and least expensive cleanup option — estimated to cost $111,446 — would be to monitor the ground water over the next seven to nine years while the hazardous substances naturally degrade. Years of study by town consultants O'Brien and Gere Engineers Inc. of Syracuse have shown the contamination is naturally ebbing. Chloroethane was found in concentrations of 170 parts per billion in January 1988; analyses 30 months later found it had declined to 68 ppb.

Town officials are tempted by this option, but believe active cleanup is better, said Town Attorney Mark S. Gorgos. "You really don't know what's in an old landfill. Who's to say (whether) years from now, some other contaminant will spring forth?" he said.

Mark E. Turner, director of the Broome County Industrial Development Agency, which is in charge of Broome Corporate Park, said the cleanup plan advocated by state and federal environment officials is reasonable, but disappointing.

The IDA had hoped cleanup would involve excavating the Lower Landfill so the land, which fronts the railroad tracks, could be reclaimed for use, Turner said. That option, however, costs an estimated $5.2 million. "It seems . . . it's not in the economic cards," Turner said.

Documents on the landfill are available for review in the town hall at 1271 Conklin Road, open weekdays from 9 a.m. to 12:30 p.m. and 1:3[illegible] p.m. to 4 p.m. Comments may be made at Monday's meeting or sent in writing to Brian Davidson, project manager, New York State Department of Environmental Conservation 50 Wolf Road, Albany, N.Y. 12233.

Doctor: Don't look to Canada

Canadian physician cites low pay, few health specialists

By LEE SHEPHERD
Staff Writer

care and provide an entry into the health care system.

There's another hitch.

There are too few primary care doc-

down. Since then, demand for services has soared and remains unmet, she said.

elementary school, Schumacher said. less and is not going to stay on the market, said purchase of the

2/26/91 Press & Sun Bulletin

Conklin reviews dump cleanup plans

By EDIE LAU
Staff Writer

A proposal to clean a pair of hazardous dumps in the Town of Conklin was greeted Monday with curiosity but not challenged.

A public information meeting in the town hall to discuss the old town dumps that are on the state and federal superfund lists drew about 20 people, most of them government officials.

The audience asked questions about the logistics and cost of the $4.3 million plan recommended by the state Department of Environmental Conservation and federal Environmental Protection Agency, but voiced no criticisms.

Under the agencies' preferred plan, the landfill surfaces would be capped to keep water out, and the existing leachate would be collected and discharged through existing sewer lines to the Binghamton-Johnson City Joint Sewage Treatment Facilities in Vestal.

Located on about 8.5 acres west of Route 7 in what is now Broome Corporate Park, the two dumps were used by the town between 1964 and 1975. Nine years later, engineers discovered evidence of ground water contamination from chemicals leaching out of the garbage.

Roughly 160,000 gallons a year of leachate would be sent to the sewage plant for treatment, according to engineering estimates. Town Attorney Mark S. Gorgos said consultant O'Brien and Gere Engineers Inc. of Syracuse has submitted data to the sewage plant showing the leachate would have no effect on the plant's ability to treat sewage. The plant takes in nearly 18 million gallons of sewage a day.

DEC Project Manager Brian Davidson cautioned that the $4.3 million estimated cost for cleanup may be overstated by as much as 50 percent, or underestimated by as much as 30 percent. "We're ballparking here as best we can," he said.

The estimate shows a one-time cost of $3.1 million — the price of capping the surfaces, installing pumps and building trenches to capture the leachate and hooking up to the sewer line. Operations and maintenance for the next seven to nine years would amount to another $87,000 annually, including $11,000 for sewage treatment and $21,000 for insurance, said Paul D. Fox, a design engineer with O'Brien and Gere.

Joseph Brofcak of Powers Road implied the insurance was steep, asking, "What type of insurance are we buying for $21,000?"

Fox said the insurance would cover people working at the site.

Plan details are available for public review at the town hall on Route 7 and the DEC office on Route 11 in Kirkwood. The DEC will accept comments on the project through March 6. They should be sent to: Brian Davidson, project manager, New York State Department of Environmental Conservation, 50 Wolf Road, Albany, N.Y. 12233.

Citizen Participation Plan
Town of Conklin Landfills (I.D. No. 704013)

Section I Introduction to Plan

The New York State Department of Environmental Conservation is committed to a citizen participation program as a part of its responsibilities for the inactive hazardous waste site remedial program. Citizen participation promotes public understanding of the Department's responsibilities, planning activities, and remedial activities at inactive hazardous waste disposal sites. It provides an opportunity for the Department to learn from the public information that will enable the Department to develop a comprehensive remedial program which is protective of both public health and the environment.

Section II Basic Site Information

The Town of Conklin owns two inactive municipal landfills (upper and lower) located south of Powers Road, and approximately one mile north of the Kirkwood Interchange of Interstate Route 81. The two landfills are located within the perimeter of the Broome Corporate Park in Broome County, New York. The lower landfill was operated by the Town of Conklin from 1964-1969, and the upper landfill, also operated by the Town, was operated from 1969-1975.

Section III Project Description

O'Brien and Gere Engineers completed a two phase hydrogeologic investigation for the Broome County Industrial Development Agency in February 1985. In 1986, the Town of Conklin Landfills were nominated for the National Priorities List (NPL). The listing of the site on the NPL requires the specific procedures be followed to thoroughly investigate and remediate the site. The site was officially listed on the NPL in March 1989.

On June 12, 1987, a Consent Order was signed between the Town of Conklin and the New York State Department of Environmental Conservation requiring a thorough investigation and remediation of the site. The Consent Order required, as a first step, the preparation of a Preliminary Report. The Preliminary Report, issued in October 1987, included all previous data generated as well as a work plan for additional remedial investigation and a feasibility study. The Consent Order also allowed for up to 75 percent of the Town of Conklins costs for site remediation to be reimbursed by the State under Title 3 of the Environmental Quality Bond Act (EQBA).

The Remedial Investigation (RI) was completed in December 1988. The RI concluded that presently the landfills do not pose an unacceptable risk to human health or wildlife. The RI also indicated only very limited groundwater contamination in the immediate vicinity of the Upper Landfill. Confirmatory sampling of select monitoring wells in June 1990 essentially confirmed the RI findings and provided data validated data. A methane gas survey, also performed in June 1990, indicated no methane at either landfill. The Feasibility Study (FS) Report was completed in January 1991 and evaluated six (6) remedial alternatives for the remediation of the landfills.

The preferred alternative includes landfill capping, leachate collection and treatment, fencing, deed restrictions, and groundwater monitoring.

Section IV Identification of Affected and/or Interested Public
(Contact List - to be expanded as interested public or affected parties are identified)

Phillip R. Marks
Supervisor, Town of Conklin
PO Box 182
Conklin, New York 13748
607-775-4114

Mark Gorgos
Coughlin and Gerhart
1 Marine Midland Plaza
PO Box 2039
Binghamton, New York 13902-2039
607-723-9511

Mr. C. Miller
Box 350, Conklin Road
Conklin, New York 13748

Mrs. D. Hamm
PO Box #53
Conklin, New York 13748

Mr. J. Ferry
PO Box 174
WestView Station
Binghamton, New York 13905

Mr. R. Rowse
1258 Conklin Road
Conklin, New York 13748

Mr. S. Ryall
1256 Conklin Road
Conklin, New York 13748

Mr. J. Villano
1262 Conklin Road
Conklin, New York 13748

E. Smith
1275 Conklin Road
Conklin, New York 13748

D. Eckelberger
Box 339 RD #2
Conklin, New York 13748

R. Edminster
1287 Conklin Road
Conklin, New York 13748

M. Smith
1285 Conklin Road
Conklin, New York 13748

D. Kernan
1253 Conklin Road
Conklin, New York 13748

O. Desirone
1248 Conklin Road
Conklin, New York 13748

A. Dahteria
1251 Conklin Road
Conklin, New York 13748

R. Johnson
1281 Conklin Road
Conklin, New York 13748

A. Allen
1279 Conklin Road
Conklin, New York 13748

R. Pessarchick
1283 Conklin Road
Conklin, New York 13748

R. Gleason
Conklin Road
Conklin, New York 13748

Mr. and Mrs. McGee
1269 Conklin Road
Conklin, New York 13748

L. Brown
1278 Conklin Road
Conklin, New York 13748

Mr. and Mrs. Petrick
1250 Conklin Road
Conklin, New York 13748

Mr. and Mrs. Petrick
1248 1/2 Conklin Road
Conklin, New York 13748

CONKLIN DUMPS MEDIA LIST:

Media

WBNG - TV
Front Street
Binghamton, NY 13905

WICZ - TV
Vestal Parkway
Binghamton, NY 13903

WMGC - TV
Ingraham Rd.
Binghamton, NY 13903

WEBO - Radio
119 McMaster St.
Owego, NY 13827

WINR - Radio
Windy Hill
Binghamton, NY 13905

WSKG Radio
531 Gates Rd.
Vestal, NY 13850

WENE Radio
2721 E. Main
Endicott, NY 13760

Binghamton Press/Sun Bulletin
Vestal Parkway East
Binghamton, NY 13902-9982

Section V Identification of Department Contacts

NYSDEC Project Manager:

Brian H. Davidson
NYSD of Environmental Conservation
50 Wolf Road - Room 224
Albany, New York 12233-7010
518-457-1641

NYSDEC Regional Contact:

Scott Rudabaugh
NYSD of Environmental Conservation
RD #1 Route 11
Kirkwood, New York 13795
607-773-7763

NYSDEC Citizen Participation Specialist:

Kate Lacy
NYSD of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204
315-426-7400

NYSDOH Contact:

Gary Robertson
NYSD of Health
677 South Salina Street
Syracuse, New York 13202
315-426-7612

County Health Department Contact:

Robert W. Denz
Director of Environmental Health
Broome County Department of Health
1 Wall Street
Binghamton, New York 13901
607-772-2887

NYSDEC Toll Free Information Phone:

1-800-342-9296

Section VI Identification of Document Repository

Conklin Town Hall
1271 Conklin Road
Conklin, New York 13748
Telephone: 607-775-3454

Hours Monday - Friday
9:00 - 12:30
1:30 - 4:00

Documents are also available at NYSDEC Offices in Kirkwood, Albany, and at the USEPA, Region II Office in New York City.

Section VII Description of Citizen Participation Activities

1. When the RI/FS is completed a Public Notice of the Proposed Remedial Action Plan will be published. The Public Notice will include a description of the problems identified at the site, a description of the proposed remedial action, identification of the document repository, identification of a contact person, and a announcement of public meeting. The public comment period has been scheduled to begin on February 4, 1991 and extend until March 6, 1991. A public meeting has been scheduled for February 25, 1991 at the Conklin Town Hall on Conklin Road (Route 7) at 7:00 pm.

2. The RI/FS report, preferred remedial action plan, and tentative schedules for design and construction will be presented at the public meeting. There will be a public comment period of at least 30 days to receive public comments.

3. A Responsiveness Summary listing significant public comments received and demonstrating how these comments were taken into account will be written.

4. A Public Notice of the Final Remedial Plan selected will be published. The Public Notice will include a brief analysis of the remedial action selected, a discussion of any significant changes from the plan presented to the public at the Public Meeting, and a notice of availability of the Responsiveness Summary.

Definitions of Significant Elements and Terms of the Remedial Program

NOTE: The first eight definitions represent major elements of the remedial process. They are presented in the order in which they occur, rather than in alphabetical order, to provide a context to aid in their definition.

Site Placed on Registry of Inactive Hazardous Waste Sites - Each inactive site known or suspected of containing hazardous waste must be included in the Registry. Therefore, all sites which state or county environmental or public health agencies identify as known or suspected to have received hazardous waste should be listed in the Registry as they are identified. Whenever possible, the Department carries out an initial evaluation at the site before listing.

Phase I Site Investigation - Preliminary characterizations of hazardous substances present at a site; estimates pathways by which pollutants might be migrating away from the original site of disposal; identifies population or resources which might be affected by pollutants from a site; observes how the disposal area was used or operated; and gathers information regarding who might be responsible for wastes at a site. Involves a search of records from all agencies known to be involved with a site, interviews with site owners, employees and local residents to gather pertinent information about a site. Information gathered is summarized in a Phase I report.

After a Phase I investigation, DEC may choose to initiate an emergency response; to nominate the site for the National Priorities List; or, where additional information is needed to determine site significance, to conduct further (Phase II) investigation.

Phase II Site Investigation - Ordered by DEC when additional information is still needed after completion of Phase I to properly classify the site. A Phase II investigation is not sufficiently detailed to determine the full extent of the contamination, to evaluate remedial alternatives, or to prepare a conceptual design for construction. Information gathered is summarized in a Phase II report and is used to arrive at a final hazard ranking score and to classify the site.

Remedial Investigation (RI) - A process to determine the nature and extent of contamination by collecting data and analyzing the site. It includes sampling and monitoring, as necessary, and includes the gathering of sufficient information to determine the necessity for, and proposed extent of, a remedial program for the site.

Feasibility Study (FS) - A process for developing, evaluating and selecting remedial actions, using data gathered during the remedial investigation to: define the objectives of the remedial program for the site and broadly develop remedial action alternatives; perform an initial screening of these alternatives; and perform a detailed analysis of a limited number of alternatives which remain after the initial screening stage.

Remedial Design - Once a remedial action has been selected, technical drawings and specifications for remedial construction at a site are developed, as specified in the final RI/FS report. Design documents are used to bid and construct the chosen remedial actions. Remedial design is prepared by consulting engineers with experience in inactive hazardous waste disposal site remedial actions.

Construction - DEC selects contractors and supervises construction work to carry out the designed remedial alternative. Construction may be as straightforward as excavation of contaminated soil with disposal at a permitted hazardous waste facility. On the other hand, it may involve drum sampling and identification, complete encapsulation, leachate collection, storage and treatment, groundwater management, or other technologies. Construction costs may vary from several thousand dollars to many millions of dollars, depending on the size of the site, the soil, groundwater and other conditions, and the nature of the wastes.

Monitoring/Maintenance - Denotes post-closure activities to insure continued effectiveness of the remedial actions. Typical monitoring/maintenance activities include quarterly inspection by an engineering technician; measurement of level of water in monitoring wells; or collection of ground water and surface water samples and analysis for factors showing the condition of water, presence of toxic substances, or other indicators of possible pollution from the site. Monitoring/maintenance may be required indefinitely at many sites.

Consent Order - A legal and enforceable negotiated agreement between the Department and responsible parties where responsible parties agree to undertake investigation and cleanup or pay for the costs of investigation and cleanup work at a site. The order includes a description of the remedial actions to be undertaken at the site and a schedule for implementation.

Contract - A legal document signed by a contractor and the Department to carry out specific site remediation activities.

Contractor - A person or firm hired to furnish materials or perform services, especially in construction projects.

Delisting - Removal of a site from the state Registry based on study which shows the site does not contain hazardous wastes.

Potentially Responsible Party Lead Site - An inactive hazardous waste site at which those legally liable for the site have accepted responsibility for investigating problems at the site, and for developing and implementing the site's remedial program. PRP's include: those who owned the site during the time wastes were placed, current owners, past and present operators of the site, and those who generated the wastes placed at the site. Remedial programs developed and implemented by PRP's generally result from an enforcement action taken by the State and the costs of the remedial program are generally borne by the PRP.

Ranking System - The United States Environmental Protection Agency uses a hazard ranking system (HRS) to assign numerical scores to each inactive hazardous waste site. The scores express the relative risk or danger from the site.

Responsible Parties - Individuals, companies (e.g. site owners, operators, transporters or generators of hazardous waste) responsible for or contributing to the contamination problems at a hazardous waste site. PRP is a potentially responsible party.

Site Classification - The Department assigns sites to classifications established by state law, as follows:

o Classification 1 - A site causing or presenting an imminent danger of causing irreversible or irreparable damage to the public health or environment --immediate action required.

o Classification 2 - A site posing a significant threat to the public health or environment--action required.

o Classification 2a - A temporary classification for a site known or suspected to contain hazardous waste. Most likely the site will require a Phase I and Phase II investigation to obtain more information. Based on the results, the site then would be reclassified or removed from the state Registry if found not to contain hazardous wastes.

o Classification 3 - A site which has hazardous waste confirmed, but not a significant threat to the public health or environment--action may be deferred.

o Classification 4 - A site which has been properly closed--requires continued management.

o Classification 5 - A site which has been properly closed, with no evidence of present or potential adverse impact--no further action required.

State-Lead Site - An inactive hazardous waste site at which the Department has responsibility for investigating problems at the site and for developing and implementing the site's remedial program. The Department uses money available from the State Superfund and the Environmental Quality Bond Act of 1986 to pay for these activities. The Department has direct control and responsibility for the remedial program.

New York State Department of Environmental Conservation
615 Erie Blvd. W., Syracuse, NY 13204-2400

Thomas C. Jorling
Commissioner

February 4, 1991

SAMPLE

[redacted]

Dear Interested Citizen:

On February 25th local citizens will be updated on remedial plans for the Town of Conklin landfills which are included on the New York State Inactive Hazardous Waste Site List. The landfills are also on the National Priority List (Superfund sites). I have included the press announcement which has been forwarded to the media in order to inform local residents of the meeting. As required by law, a complete legal notice appeared in the Binghamton Press on February 5th.

The encouragement of public participation in decisions regarding inactive hazardous waste sites is an integral part of both the State and Federal programs to locate, investigate, and remediate hazardous waste sites. Staff from both the EPA and the DEC are available to answer questions by phone if you are unable to attend the February 25th meeting.

I would encourage you to attend the public meeting and to raise any questions or objectives you have regarding the studies or the chosen remedial alternative. A Responsiveness Summary will be prepared to answer any questions raised by the local community during this public review process. Most of the documents you might want to view are available at the Conklin Town Hall. Additional data may be reviewed at the DEC suboffice in Kirkwood. Scott Rodabaugh of the Kirkwood staff would be able to arrange for your access to this material (607-773-7763). If you have any questions or concerns you wish to raise prior to the meeting, you may contact me at our DEC regional headquarters in Syracuse (315-426-7400).

Sincerely yours,

Kate Lacey

Kate Lacey
Citizen Participation Specialist

KL:fn

Enclosure

APPENDIX 5.4

CONKLIN DUMPS SITE

Town of Conklin,
Broome County, New York

Proceedings held at the Town Hall, Town of Conklin, 1271 Conklin Road, Conklin, New York on the 25th day of February, 1991, commencing at 7:00 p.m.

CARLEEN J. TAYLOR
3408 BRENTWOOD PLACE
VESTAL, NEW YORK 13850

MS. LACEY: Good evening. I'm Kate Lacey. I'm with the State Department of Environmental Conservation. I'm involved in the citizen participation part of the department. The role of the people in citizen participation is to oversee the public meetings, public notice and to assure that the public has the opportunity to both find out and to participate in the decision making process with regard to hazardous waste sites.

As we get started, I'm going to circulate a yellow pad with just names and addresses please so that we have can have a record of who attended. Mainly to see how the mailing list is. If there are further informational mailings to go out, we want to make sure that we have all the people who are directly affected and interested.

There are a couple of housekeeping chores which have to be taken care of up front. We have a steno here tonight taking an official record and the stenographer is Carleen Taylor. She will be keeping a stenographic record and we ask when we get to the comment part of the

hearing of the meeting tonight that you would please make sure that you clearly state your name. That is the most difficult part of her job tonight is getting everybody's name straight. So that is one courtesy I think we can probably manage.

The people at the table up here generally represent the governmental agencies involved in the Conklin site. The two groups that you really have to be careful to separate just for the sake of realizing that one is Federal and one is State. The DEC is the State agency involved with overseeing the site and tonight at the end of the table is Brian Davidson who is the project manager for the site for the DEC.

Next to him is Bob Cozzy who is the director of the special projects office of the DEC which deals with the sites that are involved with receiving some municipal funding reimbursement of the cost of the cleanup.

Hidden in the audience is Scott Robaugh who works out of the Kirkwood office. And if you really -- if you're really irate and have

to get in touch with somebody nearby fast he is the person you should see. Okay.

I work out of the Syracuse office. If there's any need to get in touch with me, I can be located in Syracuse and can usually sort out anyone who would really know an answer. I don't know anything but I can usually find someone who has them.

As I say, the information sheet is going around to sign up. The other part of housekeeping we have to take care of is that we have a couple of informational handouts which will explain briefly hopefully some of the technical terms that we will hear. The first talks about remedial investigations and feasibility studies and that is the reason that we are here tonight to discuss a remedial investigation and feasibility study.

The other that we are talking about is a record of decision and that is as it sounds is the step in the process where an actual determination is made as to what's going to be the chosen remediation and that's a little bit of a step down the way.

In this particular seat we are dealing also with the Federal environmental branch which is the Environmental Protection Agency. And representing the EPA tonight is Joel Singerman who is the acting chief of the Superfund branch for New York for this region, for the region that includes all of New York State. And with him is Richard Ramon who is the project manager for the EPA for this site.

Okay. Let's see. As far as introductions people who have actually done the technical investigation, remedial investigation work are from the engineering firm of O'Brien and Gere. The project manager for this site is John Tomik and he'll be explaining the remedial investigation, the work that was done to investigate the site.

And Douglas Crawford who is a managing engineer with O'Brien and Gere and he will be talking about the feasibility study portion. Also here from O'Brien and Gere is Paul Fox who is a design engineer. I don't know where he went to.

As with any site there is certainly a

local government interest and in this case since the landfills were owned by the -- and still are owned by the Town of Conklin -- the local officials have an especially acute interest in what has been investigated, what the findings have been and what the alternatives may be for dealing with the site. The town supervisor, Timothy O'Hearn -- you probably already know these people. I am introducing them to these people I guess. And town board members if you're here Raymond Edmister, town councilman, Frank Strew, Mark Dedrick, Tom Gillett. And the attorney for the town Mark Gorgos. Mark is over here.

Are there any plain ordinary citizens who came? Is there anybody who hasn't been introduced?

The first thing that we are going to do is a brief overview of the process of how we got where we are tonight and what stage in the remediation we are right now. Just to give a brief overview Brian Davidson who is the project manager for the DEC will give you some background information -- Brian.

MR. DAVIDSON: The landfills are located just west of the Town Hall, the other side of Route 7 right out this way. They are about eight and a half acres in size all together. The landfills were owned and operated by the Town of Conklin. The lower landfill was operated from 1964 to 1969. The upper landfill was operated from 1969 to 1975. The lower landfill accepted primarily municipal solid waste, about twenty-five thousand cubic meters. The upper landfill some industrial waste were codisposed with municipal wastes. The upper landfill is about fifty-five thousand cubic meters total.

The landfills are located within the perimeter of the Broome Corporate Industrial Park. Currently most of the land around the landfills is vacant agricultural land and forrest. The lower landfill is adjacent to approximately forty acres designated wetlands and there is some industrial and residential development in the area.

In 1975 a closure order was issued by the DEC. And a two phase hydrogeologic

investigation was completed by O'Brien and Gere Engineers for the Broome County Industrial Development Agency in 1984 and 1985.

In June 1986 the site was nominated for the NPL based on those studies. And some additional field work was done in 1986. In June 1987 a consent order was signed between the Town of Conklin and the department which provided for funding under the Environmental Quality Bond Act of 1986 whereby the town is reimbursed 75 percent of their costs in investigating and remediating the landfills under the bond act.

The remedial investigation was completed in December of 1988. There was a confirmatory sampling done in June of 1990 and a methane gas survey was also done in June of 1990. The feasibility study was recently completed in January of 1991 and a proposed plan was issued by the USEPA in February this month 1991.

John, are you going to -- John Tomik from O'Brien and Gere will now discuss the remedial investigation feasibility study.

MR. TOMIK: As Brian indicated, site investigations were initiated back in 1984 as part of the proposed development of the Industrial Park. Investigations were conducted which included the installation of monitoring wells around both the upper and the lower landfill. For orientation purposes, this is a map showing the location of the upper landfill. The lower landfill is this "U" shaped area just to the west of Route 7. This map shows Route 7 -- the north orientation is to the right of the map. The Town Hall we are located in is just right about in this area right here.

As Brian indicated, the upper and lower landfill are located in the vicinity of designated wetlands which are identified in the map in blue. Based on the initial site investigation work that was conducted in 1984 and 1985 we identified there was some contaminants detected in the groundwater monitoring wells downgradient from the lower and the upper landfill. These contaminants included volatile organic compound as well as

a number of inorganic heavy metal compounds. They were detected at low levels at a few of the monitoring wells and at high levels in leachate samples that were collected from the upper landfill.

Based on the results of the leachate analyses and the groundwater analyses and the close proximity of homeowner wells along Route 7 and the municipal supply well which is located to the northeast of the site, the landfills were nominated on the NPL list as Brian Davidson had indicated. This initiated the remedial investigation and the feasibility study that has been ongoing since 1986.

As part of the remedial investigation a number of monitoring wells were installed. Sediment samples were collected. Leachate samples were collected to identify the constituents that were identified within the leachate and within the groundwater and also to evaluate potential impacts on human health in the environment.

What I would like to do is briefly summarize the results of investigations that

were conducted to date and then turn it over to Doug Crawford to discuss some of the remedial evaluations that we are evaluating.

This slide just lists some of the types of investigations that were conducted at both the upper and the lower landfill. In 1985 a magnamometer survey was conducted of the upper landfill to delineate the boundaries of the fill area. In addition, two monitoring wells have been installed as part of the initial investigations conducted in '84 and '85 and as part of the remedial investigation. These wells are installed in the vicinity of both the upper and lower landfill and throughout the Industrial Park area.

Permeability tests were conducted on several of the monitoring wells to determine the rates of groundwater flow beneath both the upper and lower landfill sites. Three sets of analyses were initially conducted in '83 - '84 and '86 but these are also supplemental later on with analyses of the groundwater that were conducted in 1988 and 1990. Two sets of leachate analyses were conducted from wells

that were actually installed within the landfill material and also from seeps that were detected at both the upper and lower landfill. In addition, homeowner wells were sampled and analyzed that were located along Route 7.

In addition to some of the subsurface investigations surface water samples were collected along Carlin Creek and also wetland samples were collected within the designated wetland areas just to the east of the lower landfill. And in addition, sediment samples were collected along with the surface water samples of both the wetlands areas and within Carlin Creek.

Since the work that was done in '86, supplemental investigations were completed which included replacing a few wells that were run over by snow plow. The additional surface and investigations were conducted at the upper landfill. The extent of the refuse was defined for the lower landfill area which conducted testing and excavating of test trenches and initial surface water samples as

well as resampling in some of the homeowner wells.

This map illustrates a closer picture of both the upper and the lower landfill sites. Again, north is to the right of the page. This map identifies specific locations of groundwater monitoring wells that are identified in red on the map showing the wells that are installed downgradient from the upper landfill.

During the initial phase in the investigations groundwater monitoring wells were installed and groundwater elevations were measured at each of the monitoring wells to define the direction of groundwater flow. Based on this determination it was assessed that the groundwater floater action is primarily in an eastward direction towards the Susquehanna and towards Route 7. As a result, additional ground monitoring wells were installed -- from those areas identified detectable levels of volatile organic compounds within the groundwater.

As I mentioned, also sediment samples and

surface water samples were collected at the locations shown by the squares and also leachate samples were collected at the triangles for both the upper and the lower landfills.

Based on the results of the site investigation it was determined from the risk assessment that the potential risk posed by both the landfills were within acceptable ranges of EPA and as a result the landfills are not having a significant impact on the environment or human health. However, we did identify elevated levels of a few organic compounds in well eleven which is located immediately downgradient from the upper landfill.

The compounds identified at this well included chloroethane, dichloropropane and xylenes. The only compound where the levels were of significant concentrations were for the chloroethane where on the most recent analyses in 1990 we detected concentrations of sixty-eight parts per billion. The other compounds we detected in monitoring well

eleven were organic solvents xylene and the dichloropropane but the levels were either at or slightly above groundwater standards and the concentrations weren't significant when compared to groundwater.

The results of additional monitoring data revealed wells within a few hundred feet downgradient from monitoring well eleven show the same compounds were not detected in the monitoring wells further downgradient. As a result, the chloroethane concentrations that were detected in monitoring well eleven were confined to the close proximity of the well itself and were within less than a hundred feet of the wells downgradient.

In addition to the groundwater samples we also collected leachate samples from both the upper and lower landfill. The leachate sample did detect levels of a number of additional organic compounds that exceeded the water quality standards and samples identified in organic compounds that exceeded the quality standard. Based on this information the prime objective of the feasibility study was to

evaluate remedial alternatives that would restrict the migration of the organic compounds that were detected in monitoring well eleven and also to prevent any future migration of some of the compounds that were detected in the leachate sample for both the upper and lower landfill, to restrict the migration of leachate from the fill areas to get into the groundwater. And those were the primary objectives of the feasibility study were to evaluate remedial alternatives to address these conditions and also to restore the groundwater quality in the vicinity of monitoring well eleven -- to restore that groundwater quality back to water quality that meets State standards -- State and Federal water quality standards.

This slide just illustrates in cross section the different types of deposits that were encountered in the vicinity of both the upper and lower landfill. This is going west to east going towards the Susquehanna River to the right showing locations of specific monitoring wells. In the vicinity of the

upper landfill we indicated that the sub surface geology consists of unconsolidated materials primarily of a glacial till which has a very low groundwater transmitting and as a result they are very low beneath the lower landfill and this is attributed to the very localized migration of the volatile organic compounds that were detected at monitoring well eleven.

In the vicinity of the lower landfill, the geologic deposits consist of a sand and gravel material where groundwater flow levels are relatively high. However, we did not detect any hazardous constituents in the groundwater monitoring wells from the lower landfill. So that primary area of concern was the organic compounds that were detected again immediately downgradient of the upper landfill of monitoring well eleven.

What I would like to do is turn it over to Doug Crawford to discuss the evaluation of remedial alternatives based on the results of the remedial investigation.

MR. CRAWFORD: What I would like to do

first is to give you an overview of the FS process, the feasibility process and then get into some of the specifics regarding the site. Briefly, the feasibility study is that portion of the remedial investigation feasibility process that evaluates technologies and alternatives that are applicable to the site relative to the remediation.

The feasibility study that was conducted at the landfill was consistent with the laws that govern that process, the national oil and hazardous substances pollution contingency plan also known as the NCP and also consistent with EPA's guidance on conducting FS's. The steps that are involved in a feasibility study are basically three steps. The first is the identification screening technologies. The second is the development and screening of alternatives and the third, the alternatives are analysed in detail.

During the first step of the FS process there are within this one step three separate sub steps if you will. The first is to define the objectives of the remedial action. In

this case there were three as John mentioned. One, the first one was to prevent ingestion of groundwater that was in excess of the state and federal standards. The second was to prevent any future migration of constituents from the landfill into the groundwater which would then cause problems within the groundwater and the third was to restore that groundwater to the state and federal standards.

The second step was to identify response actions which are basically classes of technologies that are used to address the remedial action objectives. In this instance there were five different responses that were identified as applicable. They included institutional actions which include such things as deed restrictions and fencing, groundwater monitoring -- those types of things. Containment technologies which would include things such as caps on the landfill. Collection technologies, things such as groundwater and leachate collection. Treatment technologies which are used to treat

the material once it's been collected -- the leachate and groundwater. And finally, discharge. What do you do after you have collected and treated the groundwater leachate.

The other portion or the other thing that we need to identify at this stage of the game are the areas or volumes of media -- that we need to deal with at this site. They included three different media. The landfills themselves, the leachate that was being generated by the landfills and groundwater that has been impacted.

And then the final part of this process was to identify specific technologies that could be used that were applicable to the landfill or to the landfills. And those technologies are identified through a screening process that consists of three different criteria, effectiveness, implementability and cost.

From there the screening, the identification screening of technologies basically identifies those technologies that

are appropriate for use at the site and those technologies then are grouped together into alternatives which address the site wide problems. For this site we initially developed six alternatives. I will get into the specifics of those alternatives in a minute. Those six alternatives were then also screened using the criteria of effectiveness, implementability and cost. The purpose of that screening then is to whittle down the list of alternatives that are later to undergo detailed analyses such that the numbers that are analyzed in detail are a manageable number and that they represent the range of alternatives that are developed for the site. And at this site the list of six alternatives was screened down to four alternatives.

The final step in the feasibility study then is to take those alternatives that have been screened and pass the screening and submit them to the detailed analysis. The detailed analysis consists of really seven additional criteria. There are nine shown here. The first seven from overall protection

of human health and environment down through cost are evaluated in the feasibility study. The support agency acceptance are being -- are evaluated through the public comment period.

Just to give you a quick overview of what these criteria mean, the overall protection of human health and the environment criteria basically is mandated by law that any alternative, any remediation action that is implemented must be protective of human health and environment. And basically the alternatives are evaluated to identify just exactly how protective they are. Varying degrees of protectiveness.

The next criterion is compliance with ARARs. They are applicable or relevant and appropriate requirements. These are things such as drinking water standards, criteria that have been promulgated by the State and Federal governments that need to be met.

Long-term effectiveness and permanence. That criteria is used to assess how effective in the long-term the various remedial alternatives are in addressing the objectives.

Reduction in toxicity, mobility or volume which is used to address how the alternatives reduce these components of the constituents that are problems at the site.

Short-term effectiveness is used to evaluate such things as how long does it take for you to achieve the objectives and are there any short-term problems associated with the alternatives, with implementing the -- worker health and safety and protectiveness of off site receptors those types of issues.

Implementability is essentially a review of how constructable the alternatives are.

And cost is evaluated with respect to three different issues one capital costs are estimated. Secondly, annual operation and maintenance costs are identified and thirdly each of a alternatives are evaluated on a present worth basis.

And finally, after each alternative is evaluated individually against these criteria, they are looked at in a comparative basis using the same criteria to try and basically get a feel for the balance of the

alternatives, how they compare with one another.

Now, let me show you what the alternatives were that were identified and were sent through process. If you remember one of the earlier slides was general response actions. This column here identifies the responses that were developed and within each response action the various technologies that were a part of those response action. Containment actions included landfill caps and disposal of landfill material on-site. The guidelines required that a no action alternative be evaluated and that's what we are calling alternative one. The no action alternative here. In reality that includes some action of groundwater monitoring. The groundwater is monitored to provide a base, a data base in the event that we need to reevaluate alternatives in the future.

The second alternative that was developed included groundwater monitoring, fencing the landfills, the institution of deed restrictions on the land to prevent ingestion

of groundwater that may be contaminated. And again, that -- just to reiterate -- the groundwater that was found to be a problem was associated with monitoring well eleven here at the upper landfill. Chloroethane was found in this well at concentrations that were in excess of the drinking water standard and chloroethane -- neither chloroethane nor any of the other constituents that had been seen historically at the site were identified at any of the surrounding wells. So it appears to be a static condition here. Essentially the plume, if you will, does not appear to be moving and we have been tracking it overtime and it has been stationary.

The next alternative also included the installation of a cap over both the upper and lower landfills and within that cap there is also leachate collection. The landfills are presently generating leachate and this would be a method to collect that leachate for treatment.

Within alternative two there are several options for management of that leachate once

it's been collected. They include on-site treatment through metal precipitation and air stripping as well as treatment at the Binghamton Johnson City Treatment Plant.

Alternative three -- alternatives three, four and five are generally basically variations on a theme. Each of those alternatives includes monitoring, fencing and deed restrictions and it also includes placement of a cap on both the landfills with the leachate collection systems. In addition, there is active groundwater treatment collection and treatment at the upper landfill. Let me back up just a second, explain how the groundwater is dealt with in alternative two.

The data base that has been generated over the years indicates that degradation processes are occurring naturally. The way the groundwater is addressed in that is that in alternative two and one actually is that those natural processes will be left to continue to degrade the chloroethane in place.

Alternatives three, four and five address

the groundwater through pumping and treating that water. In three, four and five both the leachate and groundwater would be either treated on-site through air stripping or chemical oxidation which is alternatives three and four or through alternative five where the leachate and groundwater is discharged to the treatment plant.

Finally, alternative six is an alternative where we considered consolidation of the landfills into one landfill basically excavating the contents of the lower landfill, transporting them up to the upper landfill and placing the cap on the upper landfill along with leachate and groundwater collection and treatment.

The screening -- these six alternatives were subjected to the screening and the outcome of that screening process as I indicated before was that four of the alternatives were passed through to the detail analysis and those four alternatives consisted of one through four. And those four alternatives then were analyzed in detail

using the seven criteria that I went over a few minutes ago both individually and then collectively, compared against one another.

And at this point I guess I'd like to turn the program over to Brian. He can discuss where things have gone from the feasibility study.

MS. LACEY: Before Brian goes on with the next stage here of the explanation I'm going to hand out copies of a proposed plan. This has a summary of the alternatives which were just described to you and there's an overview of each one of the proposals, each one of the alternatives, a cost estimate and it might be helpful for you to be looking at the appropriate sections as Brian describes the rest of the process here. Actually we've gone through the now the remedial investigation the background material, the feasibility study which looks at proposed alternatives. And then the way this works is that the various technologies are evaluated and presented and the agencies take a look at those alternatives and try to agree on a selected alternative.

The real purpose of this meeting tonight is to add in the public input, to give the public an opportunity to question the technology, question the results, question some of the judgments that have been made and to voice their own opinion as to the alternatives available or criticize some of the choices made at various points in the process. And all of the materials aside from this brief summary all of the technical background materials are available for viewing. And there is a provision for public comment to still get into this process both written not just tonight but written comments up to March 6th. And when we get further along I will give you the address and way to get the comments in and also the locations of where additional material can be examined including the town hall. There is a set of all the material here. Brian, do you want to go through the --

MR. DAVIDSON: Based on the results of the feasibility study, the USEPA and DEC concurred that alternative two, option B was

the preferred alternative for the Conklin site. Alternative two consists of the multi-media cap on both landfills, leachate collection wells at the upper landfill and interceptor trench at the lower landfill. And option B is discharged to the Binghamton Johnson City joint Sewage treatment plant for the leachate collected from the landfills. The fall back to that option would be option A which would be the multi-media cap, leachate collection wells at the upper and lower landfill -- excuse me -- leachate collection wells at the upper landfill, interceptor trenches at the lower landfill and on-site treatment by metals treatment and air stripping for the leachate discharged to Carlin Creek.

It's important to note that the remedy is the preferred remedy for the site and the final selection will be documented in the record of decision for the Conklin site only after consideration of all comments on the remedial alternatives address in the proposed plan and in the feasibility study report.

MS. LACEY: Okay. Now, just to make sure we have this all properly recorded, the comment period began on February 4th. There were two legal notices published in the Binghamton Press for the purpose of notifying people of the availability of information on the site. There are technical records including the complete remedial investigation, the feasibility study and the proposed remediation action selection here at the town hall. Also over at the DEC office in Kirkwood. There is also a set of the information at the DEC office in Syracuse, one in Albany at 50 Wolf Road if it is more convenient for you and one in New York City if it's really convenient for you.

There will be additional comments accepted as I said until March 6th in writing to Brian Davidson and his address is given on the front sheet right-hand side of the paper that you were just given -- the white sheet you were given.

What we're going to do now is open up for any questions that anyone has. Questions,

comments? I just ask that you do identify yourself for our stenographer who will try to keep a record of what everyone has to say.

MR. DEWITT: Tom DeWitt. Brian's statement is page four, option B. Is that what you're proposing?

MR. DAVIDSON: Yes.

MR. DEWITT: So people don't get lost. Thank you. Page four, option B.

MR. DAVIDSON: Alternative two, option B.

MS. LACEY: If you look up here, you can see alternative two which is this column and it will have the checkoff list of what is included in alternative two. Groundwater monitoring, fencing, deed restrictions, multi-media cap. Then the leachate treatment down here is the option -- is one would be the sewage treatment plant going to the Binghamton Johnson City sewage treatment plant. If that does not prove out to be acceptable, then the fall back is with treatment up here which is stripping and discharge to --

MR. DAVIDSON: Carlin Creek.

MR. DEWITT: Which would be A.

MS. LACEY: Right. Anyone else? Comments, questions?

MR. O'MEARA: Tom O'Meara with Broome County Environmental Management Counsel. Why was option five omitted? Alternative five.

MS. LACEY: Five would be --

MR. O'MEARA: Is that any different?

MS. LACEY: Well, the difference is --

MR. TOMIK: You're adding groundwater extraction in that alternative.

MR. O'MEARA: As opposed to collecting the leachate.

MR. TOMIK: Right. Because it was identified that the concentrations of chloroethane that were detected downgradient from the local landfill were localized and the concentrations have been reduced over the last year. We felt it would degrade naturally.

MR. O'MEARA: One other -- where is the groundwater that's perculating through the site now -- where is it going? It appears that if it's caught in this perch zone is it perculating out through the leaching or is there something about the hydrological -- that

is unknown?

MR. TOMIK: The case of the upper landfill the underlying materials consists of a very low perc -- glacial till material and within this material the groundwater flow velocities are very low. And as a result, the upper landfill you're creating what they term a bathtub effect where much leachate that's generated within the upper landfill is perched above that natural formation beneath the landfill. And that's actually accumulated within the fill material itself. And it's part of the proposed remedial alternative we would be effectively directing it out of the leachate material. So you would be reducing that threat for groundwater quality. And because the groundwater flow velocity is so low we feel the water quality impacts have been just localized to the close proximity of the upper landfill and as a result you're only seeing that impacted at monitoring well eleven and not any other monitoring wells that are further downgradient.

MR. O'MEARA: There was no contaminants

associated with the lower landfill?

MR. DAVIDSON: We did see some low levels of inorganic nonhazardous constituent such as iron, maganese and based on the level we detected there was no need for groundwater collection.

MR. O'MEARA: How about the sediment sampling that was done in the wetlands? Was anything beyond --

MR. DAVIDSON: We felt that all the analyses from the sediment samples were within background levels that were detected.

MS. LACEY: Yes.

MR. FOULKE: Thomas Foulke. Under your option B how many gallons do you anticipate would be discharged and would this go through the sewer system -- would the separate lines have to be run? Can you give us some information about that? Gallons of flow? What do you anticipate there you're going to discharge to the Binghamton Johnson City --

MR. DAVIDSON: Under the preferred alternative?

MR. FOULKE: Correct.

MR. DAVIDSON: Initially the amount of flow generated would be less than a few gallons per minute. And once you collect and treat the bulk of the leachate from the landfill those flows would probably be further reduced to less than a gallon per minute. And because of the low permeability of the materials not only beneath the landfill but the low permeability of the fill itself once the material is capped where you are isolating any leachate generation from precipitation from infiltrating the surface of the landfill you're able to go in there and extract the leachate that has been accumulated within the fill material and those volumes would be less than a few gallons per minute.

MR. FOULKE: We are talking extremely low --

MR. DAVIDSON: Yes.

MR. FOULKE: And there would be no problem with that going into the treatment plant, correct?

MR. DAVIDSON: It's not believed to pose a problem to the treatment plant.

MR. FOULKE: We would be utilizing the sewer system that we put into the park now?

MR. DAVIDSON: Yes.

MR. FOULKE: Okay.

MS. LACEY: Additional questions? Comments? Would you spell your last name?

MR. FOULKE: F-o-u-l-k-e. One more question. What is your operating and maintenance, eighty-six thousand a year? Can you break that down for us? If we are talking low volume of water is that for the come back for the testing -- how do you arrive at that figure?

MS. LACEY: This is Paul Fox who is a design engineer with O'Brien and Gere.

MR. FOX: Let me just go to the book here and I can actually give you a quick rundown. When we say it comes to eighty-six thousand dollars that's on an annual basis but that also includes ten thousand dollars for five-year review which has to be done due to the fact that fill material is being left on-site.

In addition to that approximately eleven

thousand one hundred dollars worth of leachate sampling -- eleven thousand one hundred dollars worth of leachate treatment cost. We estimated that the treatment plant would charge seven cents per gallon for leachate treatment. So that's eleven thousand dollars there.

MR. FOULKE: Per year?

MR. Fox: Yes. Additionally, we estimated insurance per year for the site to cost twenty-one thousand dollars. And also a reserve fund of twenty-one thousand dollars also per year. This reserve fund is something which is included in all cost estimates which is the money that is put aside for future use. If there is ever a problem at the site, this money will be available to use to correct any problems that could arise. This probably will not be needed at this site simply because there is a documented owner of the site who is available to take care of any problems. Whereas on many superfund sites there is no owner of record or owner that is financially responsible for the site.

MR. FOULKE: How many gallons does that come out to -- eleven thousand dollars?

MS. LACEY: I'm dividing by .07.

MR. FOULKE: Can you give me that?

MR. FOX: Not off the top of my head. I don't have my calculator with me. It comes out to --

MS. LACEY: Fifteen.

MR. FOULKE: Seven cents a gallon. We are talking eleven thousand dollars. How many gallons? Eleven thousand divided by seven cents.

MS. LACEY: I get a hundred fifty-seven thousand approximately -- roughly a hundred fifty -- between one fifty one sixty.

MR. TOMIK: Cost estimates in feasibility studies are generally assumed to be accuracy of plus fifty to minus thirty percent. So we are ballparking here as best we can based on the remedial investigation data.

MR. GILLETT: Everybody understands that. That was the question I was going to ask. It is an estimate.

MS. LACEY: Right. It is a cost estimate

MR. BROFCAK: What are we buying? What type of insurance are we buying for twenty-one thousand dollars a year?

MR. FOX: People working at the site, maintenance workers.

MS. LACEY: So it's liability insurance? Anyone else?

MR. O'MEARA: Just is there is recharge zone in this area at all? Once you cap the site and it's an effective cap would you expect the leachate to decline significantly over time?

MR. TOMIK: Yes. Based on the permeability of the materials that are there today and we've, you know, detected that there is quite a bit of leachate within the fill material right now from the standpoint the water level within the fill material is well above the groundwater elevation which demonstrates that you have had a significant accumulation of leachate within the fill. And once that the landfill is capped you will eliminate the amount of precipitation that infiltrates and the cap and generates that

leachate. So as a result we believe that it will be significantly reduced.

MR. DeWITT: Have you done any modeling to look at how long a period you would have leachate or you don't have --

MR. TOMIK: We don't have enough information of how long that would take.

MS. LACEY: Other questions?

MR. SMITH: Patrick Smith. Time to implement, the seven to nine years. What does that mean? Does that mean that after nine years things are going to be okay or is this going to be nine years to do all this work?

MR. CRAWFORD: That number is based primarily on the time that we have estimated for the groundwater to degrade to below drinking water standards -- to within drinking water standards. The caps would be there -- the landfill caps would be there essentially forever. So really that number is an estimate as to the extent of time to achieve the objective of restoring --

MS. LACEY: Anyone else? Questions? Comments?

MR. EDMISTER: Raymond Edmister. Maybe I misunderstood Pat Smith's question. He mentioned a seven to nine years but that's on alternative one, is that correct?

MR. CRAWFORD: That's correct. It's on alternative -- it's also on alternative two.

MR. EDMISTER: Okay.

MS. LACEY: Okay?

JOHN DOE: You're going to be taking the groundwater and pumping it into the sewer system?

MR. TOMIK: The leachate that is collected within the fill material.

JOHN DOE: The sewer system is in the county park -- Industrial Park. Is there a grade problem there? Are you going to have to have like a pumping station or --

MR. CRAWFORD: We haven't gotten into design right now. We expect that it will be able to utilize gravity flow but I can't say that for sure until the design is conducted.

MR. GORGOS: I'm the attorney for the Town of Conklin. I just want to clarify for those of the media that our engineers, O'Brien

and Gere have submitted data to the Binghamton Johnson City Sewage plant based on comparative studies which would indicated the leachate would have no effect whatsoever on their capacity to treat sewage at their facility.

MS. LACEY: Right. And that is the -- that is how that works. They would have to approve the Binghamton Johnson City sewer district. Anyone else?

MR. STRUBE: Did you say the erosion of the contaminants is -- could be predicted?

MR. CRAWFORD: That's correct.

MR. STRUBE: What about if you went with number one without a cap? Could you also predict erosion of the contaminant?

MR. TOMIK: It would be predicted at the same time frame but that also assumes you wouldn't have migration in the fill material into the groundwater. The primary purpose of the cap is to prevent any leachate generation within the fill material so that you don't have future groundwater quality impacts from the leachate that is generated within the fill because the contaminations that are detected

within that leachate are significantly lower than what we are seeing.

MR. STRUBE: What I wanted to get at the contaminents are deteriorating or eroding now?

MR. TOMIK: Correct.

MR. STRUBE: Without the caps you couldn't predict that that would continue?

MR. TOMIK: If we were to assume there was no other leachate recharge to the groundwater system, then we would predict it would take the same time frame for two compounds that were seen in the monitoring well eleven to degrade to water quality standards.

MR. STRUBE: What about just with the caps on or off if you had contaminents in there in a container, would that erode and give way? And you wouldn't -- your predictions would go awry then, wouldn't they?

MR. TOMIK: Correct. If you did have recharge of the leachate from the fill material into the groundwater then those calculations would no longer be valid.

MR. STRUBE: With or without the cap.

More apt to be without the cap than it could be even with the cap, right?

MR. CRAWFORD: It could be, yeah.

MR. TOMIK: That's possible but with the cap we are also proposing leachate collection to remove the volume of leachate that is within the fill material.

MS. LACEY: Any other comments? Okay, as I said before, the comment period lasts until March 6th. Written comments can be sent to Brian Davidson. The address is on the front page. Following evaluation of these comments and whatever written comments are received, a record of decision along with a responsiveness summary giving the answers to any questions that have remained. If there are comments that are turned in or questions that need to be addressed, they will also be addressed in a responsivenes summary which will accompany a record of decision which is the document that actually finalizes the choice when it comes to the alternative selected. As of right now it's open to reevaluation. If there is some significant issue raised and if there is some

question that someone should raise in the next between now and March 6th that -- I urge you to get your written comments in. Let see if there is anything else that -- is there anything we haven't mentioned?

I think that's it. Thank you very much for attending.

(WHEREUPON, the meeting was concluded at 8:01 p.m.)

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C E R T I F I C A T I O N

I, CARLEEN J. TAYLOR, do hereby certify that I attended the foregoing proceedings and the foregoing is a true and correct transcript of my stenographic notes taken in the above-entitled matter at the time and place first above mentioned to the best of my ability.

Carleen J. Taylor

CARLEEN J. TAYLOR

DATED: March 1, 1991

Conklin Site 9/25/91

1 Edie Lail Press & Sun-Bulletin: 19 Chenango St. #1115 Binghamton 13902
2 Frank Gilbert R.D. #1 - Box 236 Bing. N.Y. 13903
MARK L. DEDRICK - Town Consultant - 3D Box 273 A, BING NY 13903
Kenneth Coates Town of Conklin Code Enforcement Rt. 158 Conklin Rd, Conklin
J. Robinson - N.Y.S. Dept 677 S Salina St. Syracuse NY
Lee Bryant 497 Pumpkin Rd. Conklin N.Y.
E Patrick Smith 1275 Conklin Road, (RD2 Box 349) Conklin 13748
Raymond R Edwister Town Board Town of Conklin 1287 Conklin Rd
Thomas Gilkie Town Board Conklin Box 536A
Stephanie Davis Assemblywoman Jim Tallon 19 Chenango St Binghamton 13901
Graydon N. Tompkins 1282 Conklin Rd Conklin, NY 13748
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Scott Rokebaugh, NYSDEC - Kirkwood
Jim O'Hearn Town of Conklin
Mark S. Gorgos Town of Conklin Atty. PO Box 2039 1 Maine Midland Pl. Binghamton NY 13902
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ROBERT COZZY NYSDEC 50 WOLF RD ALBANY NY 12233
BRIAN H. DAVIDSON NYSDEC " " "
JOEL SINGERMAN USEPA 26 Federal Plaza, NY, NY, 10278
RICHARD RAMOS USEPA 26 Federal Plaza N.Y. N.Y. 10278
DONALD ECKELBERGER
Kelly Wagstaff Broome County Legislature PO Box 1766, Binghamton NY 13902

APPENDIX 5.5

Broome County
ENVIRONMENTAL MANAGEMENT COUNCIL
Broome County Office Building / Government Plaza / Box 1766 / Binghamton, New York 13902 / (607) 778-2116

Claudia Stallman, Director — Timothy M. Grippen, County Executive

March 6, 1991

Brian Davidson
Bureau of Eastern Remedial Action
NYS Dept. of Environmental Conservation
50 Wolf Road
Albany, NY 12233-7010

8 1991

SUBJECT: PROPOSED REMEDIAL PLAN FOR CONKLIN LANDFILL

Dear Mr. Davidson:

The Broome County Environmental Management Council (EMC) has revieved and is in support of the Feasibility Study for the Conklin Landfill Inactive Hazardous Waste Site. The preferred remedial alternative of capping the site and installing a leachate collection system appears to be protective of human health and the environment. The recommended treatment of the landfill leachate at the Binghamton/Johnson City publicly owned treatment works (POTW) can be supported, provided that the regulatory agencies demonstrate the following:

1) chemical composition and concentrations of leachate will not significantly increase over time;
2) organic constituents of the leachate will be effectively detoxified through the POTW biodegradation treatment process (dilution is not an acceptable remedial treatment as it impacts the loading capacity of surface waters);
3) POTW sludge and discharges are not adversely impacted; and
4) storm conditions do not cause untreated leachate to be discharged to surface waters (i.e., the Susquehanna River).

Thank you for the opportunity to comment on the Conklin Landfill Feasibility Study. Should you have any questions or concerns regarding the EMC's comments, please direct them to Broome County EMC Director, Claudia E. Stallman. She may be reached at the Broome County Office Building at (607) 778-2116.

Sincerely,

Thomas M. O'Meara

Thomas M. O'Meara
Chairperson, Broome County
Environmental Management Council

B.E.R.A.	
FOILABLE Y-N	FILE SECTION
SITE NAME	I
SITE CODE	II
SUB SECTIONS	III
PRO. ELEMENT	IV
OPERABLE UNIT NO. DESC.	V
DRAFT OR FINAL	VI

cc: T. Grippen, BC Executive
L. Augostini, BC Legislature Environment Committee
K. Wagstaff, BC Legislature
EMC Members