G.E.M.S. LANDFILL
GLOUCESTER TOWNSHIP, CAMDEN COUNTY, NEW JERSEY

START ONE
ADMINISTRATIVE RECORD
INDEX OF DOCUMENTS

1.0 FACTUAL INFORMATION/DATA

1.3 POLREPs

P. 100001-100005 Pollution Report Thirty-Three (33), Removal Action, G.E.M.S. Landfill, Gloucester Township, Camden County, New Jersey, prepared by Mr. George Zachos, OSC, Response and Prevention Branch, U.S. Environmental Protection Agency, Recipients: See Distribution List, December 19, 1984.

P. 100006-100007 Pollution Report Eleven (11), Removal Action, G.E.M.S. Landfill, Gloucester Township, Camden County, New Jersey, prepared by Mr. George Zachos, OSC, Emergency Response Section (TAT), U.S. Environmental Protection Agency, Recipients: See Distribution List, April 18, 1983.

1.7 Sampling Data/Data Summary Sheets/Chain of Custody Forms

P. 100008 Note: The actual documentation is available for review in the GEMS Landfill Site File located at the United States Environmental Protection Agency Region II, Superfund Removal Record Center, Edison, New Jersey.

2.0 DECISION DOCUMENTS

2.2 Action Memorandum

P. 200001-200002 Exemption from Six-Month Time Limit for GEMS Landfill, Gloucester Township, Camden County, New Jersey - Action Memorandum, to Mr. Lee M. Thomas, Assistant Administrator, Office of Solid Waste and Emergency Response (WH-562-A), from Mr. William N. Hedeman, Jr., Director, Office of Emergency and Remedial Response (WH-548), United States Environmental Protection Agency, October 6, 1983.

P. 200003-200022 Memorandum to Mr. William N. Hedeman, Jr., Director, Office of Emergency & Remedial Response (WH-548), from Ms. Jacqueline E. Schafer, Regional Administrator, United States Environmental Protection Agency, re: CERCL Act Immediate Removal Actions - GEMS Landfill, July 18, 1983, (Attached: Memorandum to Ms. Jacqueline E. Schafer, Regional Administrator, from Ms. Barbara Metzger, Director, Environmental Services Division, United States Environmental Protection Agency, through Mr. Dick Dewling, Deputy Regional Administrator, re: CERCL Act Immediate Removal Actions - GEMS Landfill, July 11, 1983; Attachment 1 - Briefing Document & Scope of Work, G.E.M.S. Landfill, Camden County, New Jersey, Immediate Removal Actions, prepared by Mr. John Bee, P.G. and Mr. Rodolfo Hafner, TAT II, for Mr. George Zachos, OSC, G.E.M.S. Landfill, April 13, 1983, Revised June 22, 1983; Attachment 2 - Letter to Dr. Marwan M. Sadat, Administrator, Hazardous Site Mitigation Administration, New Jersey Department of Environmental Protection, Division of Waste Management, from Mr. Fred N. Rubel, Chief, Emergency Response & Hazardous Materials Inspection Branch, United States Environmental Protection Agency, March 10, 1983; Attachment 3 - Memorandum to Mr. Fred Rubel, OHM Coordinator, EPA, Region 2, from Mr. Hans J. Crump, Chief, Response Operations Branch (WH-548-B), Office of Solid Waste and Emergency Response, United States Environmental Protection Agency, re: State Contract for GEMS Landfill Immediate Removal Action, April 1, 1983; Attachment 4 - Memorandum to Ms. Jacqueline E. Schafer, Regional Administrator, from Ms. Barbara Metzger, Director, Environmental Services Division, United States Environmental Protection Agency, through Mr. Dick Dewling, Deputy Regional Administrator, re: Transfer of CERCL Act Trust Fund Monies from Leachate Control Project to Immediate Removal Action at GEMS Landfill, Gloucester, New Jersey, May 23, 1983).

P. 200023-200026 Ceiling Increase for Immediate Removal Actions at GEMS Landfill, Gloucester Township, New Jersey - Action Memorandum, to Mr. William N. Hedeman, Jr., Director, Office of Emergency and Remedial Response (WH-548), from Mr. H.D. Van Cleave, Acting Director, Emergency Response Division (WH-548-B), United States Environmental Protection Agency, March 10, 1983.

P. 200027-200029 Request to Initiate Immediate Removal at GEMS Landfill, Gloucester Township, New Jersey, Action Memorandum, to Mr. Michael A. Brown, Acting Assistant Administrator for Solid Waste and Emergency Response (WH-562-A), from Mr. William N. Hedeman, Jr., Director, Office of Emergency and Remedial Response (WH-548), United States Environmental Protection Agency, February 7, 1983.

P. 200030-200033 Memorandum to Mr. Conrad Simon, Director, Water Management Division, from Ms. Barbara Metzger, Director, Environmental Services Division, Region II, re: Immediate Removal Action, GEMS Landfill, Gloucester Township, New Jersey, January 27, 1983, **(Attached: Request to Initiate Immediate Removal at GEMS Landfill, Gloucester Township, New Jersey,** to Ms. Rita M. Lavelle, Assistant Administrator for Solid Waste and Emergency Response (WH-562-A), United States Environmental Protection Agency, from Mr. William N. Hedeman, Jr., Director, Office of Emergency and Remedial Response (WH-548), December 28, 1982).

P. 200034-200036 Memorandum to Mr. Henry Van Cleave, Acting Director (WH-548), Emergency Response Division, from Mr. Fred N. Rubel, Chief, Emergency Response & Hazardous Materials Inspection Branch, United States Environmental Protection Agency, Region II, re: Request for Authorization to Expend Superfund Monies at the GEMS Landfill, Gloucester Township, New Jersey, January 11, 1983, (Attached: Draft Ten Point Document - (note: The actual documentation is located in the GEMS Landfill Site File, U.S. EPA, Region II, Superfund Removal Record Center, Edison, New Jersey. It is confidential and is therefore not available for review without authorization from the U.S. EPA); Memorandum to Mr. Henry Van Cleave, Acting Director, Emergency Response Division, (WH-548), from Mr. Fred N. Rubel, Chief, Emergency Response & Hazardous Materials Inspection Branch, Region II, re: GEMS Landfill, Gloucester, New Jersey, December 28, 1982).

P. 200037-200047 Memorandum to Ms. Jacqueline E. Schafer, Regional Administrator, from Ms. Barbara Metzger, Director, Environmental Services Division, United States Environmental Protection Agency, through Mr. Dick Dewling, Deputy Regional Administrator, re: Request for Concurrence to Seek Authorization to Expend Superfund Monies at GEMS Landfill, Gloucester Township, New Jersey, October 19, 1982, (Attached: Fund Authorization Report, Ten Point Document, November 17, 1982, (note: The actual

documentation is located in the GEMS Landfill Site File, U.S. EPA, Region II, Superfund Removal Record Center, Edison, New Jersey. It is confidential and is therefore not available for review without authorization from the U.S. EPA).

2.3 Documentation of State Involvement

P. 200048 Letter to Mr. William Librizzi, Director, Office of Emergency and Remedial Response, USEPA, Region II, from Dr. Jorge H. Berkowitz, Administrator, Hazardous Site Mitigation Administration, State of New Jersey Department of Environmental Protection, re: GEMS Gas Migration, August 20, 1985.

3.0 PUBLIC PARTICIPATION

3.3 Fact Sheets

P. 300001-300006 Fact Sheet: Environmental Facts, GEMS Landfill, Gloucester Township, Camden County, New Jersey, prepared by United States Environmental Protection Agency, Region 2, August 19, 1985.

3.5 Documentation of Public Meetings

P. 300007-300009 Memorandum to Mr. George Zachos, Emergency Response and Hazardous Materials Inspection Branch, U.S. EPA, from Mr. Edward W. Blanar, TAT II, Weston/SPER, re: Meeting Summary, Gloucester Township Town Hall, February 15, 1983, March 14, 1983.

P. 300010-300012 Memorandum to Ms. Joan Batory, Director, from Mr. Leon Robinson, Environmental Planner, Camden County Environmental Agency, re: Public Meeting GEMS Landfill 6/29/82 - NJDEP, - N.J. Dept. of Health, June 30, 1982.

3.6 Press Coverage

P. 300013 Newspaper article: "Kramer, GEMS landfills added to Superfund cleanup site list," The Gloucester County Times, July 25, 1982, (note: author unknown).

P. 300014 Newspaper article: "Suit filed against dumpers," by Ms. Renee Winkler, Courier-Post, October 24, 1981.

3.7 Correspondence

P. 300015-300021 Letter to The Honorable Carl Kerbowski, Mayor of Pine Hill Borough, from Mr. Gerard Burke, Office of Enforcement, State of New Jersey Department of Environmental Protection, re: Cessation of new developments in vicinity of landfill, June 18, 1982, (Attached: shaded map of area discussed in letter (note: author and date unknown); Letter to The Honorable Connie Roggio, Mayor, Township of Gloucester, from Mr. Gerard Burke, Office of Enforcement, State of New Jersey Department of Environmental Protection, re: Cessation of new developments in vicinity of landfill, June 18, 1982; Letter to Mr. Charles Decker, Chief, Bureau of Construction Code Enforcement, Department of Community Affairs, from Mr. Gerard Burke, Office of Enforcement, State of New Jersey Department of Environmental Protection, re: Cessation of new developments in vicinity of landfill, June 18, 1982).

P. 300022-300025 Letter to Resident, from Ms. Carole A. Dennis, Director of Community Services, Township of Gloucester, re: U.S. EPA visit to discuss drilling of monitoring wells behind Fox Chase II development, September 30, 1983, (Attached: Overview of Fox Chase II, Hydrogeologic Investigation, (note: author and date unknown); Figure 1 - Location of Existing Monitoring Wells, G.E.M.S. Landfill, prepared by Weston/SPER II, for unknown recipient, (note: undated); Figure 2 - Proposed Well Locations at Fox Chase II, prepared by Weston/SPER II, for unknown recipient, (note: undated)).

P. 300026 Letter to Ms. Carole Dennis, Director of Community Services, Township of Gloucester, from Mr. Fred N. Rubel, Chief, Emergency Response Branch, re: Briefing Gloucester Township concerning drilling and other activities, September 22, 1983.

P. 300027 Memorandum to Mr. Anthony Farro, Chief - Bureau of Site Management, from Mr. David Henderson, Project Manager - BSM, re: GEMS Landfill - Fencing, March 30, 1983.

P. 300028 Letter to Mr. Barry Hoffman, Township Manager, Township of Gloucester, from Mr. Paul D. Schumann, President, Garden State Water Company, re: contaminated water, March 6, 1981.

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

DATE: December 19, 1984

Region II
Response and Prevention Branch
Edison, New Jersey 08837

(201) 321-6670 - Commercial
(201) 548-8730 - 24 Hour Emergency
340-6670 - FTS

TO: C. Daggett, EPA
W. Librizzi, EPA
Emergency Response Division
J. Marshall, EPA
L. Diamond, EPA
D. Karlen, EPA
F. Rubel, EPA
B. Ogg, EPA
NRC
USCG 3rd Dist. (mer)
G. Berkowitz, NJDEP
J. Rogalski, NJDEP
M. Sadat, NJDEP
L. Romino, NJDEP

POLREP NO.: Thirty-Three (33)
INCIDENT NAME: (G.E.M.S.)
SITE/SPILL NO: 29
POLLUTANT: Chemical Leachate
CLASSIFICATION: Major
SOURCE: G.E.M.S. Landfill
LOCATION: Gloucester Township, Camden County, New Jersey
AMOUNT: Unknown
WATER BODY: Holly Run Creek

1. SITUATION:

A. The New Jersey Department of Environmental Protection (NJDEP) and the New Jersey State Health Department (NJSHD) have received reports from several residents in the vicinity of G.E.M.S. landfill complaining about the noxious odors at night and of nose bleeds.

B. The NJSHD and NJDEP have conducted a number of sampling programs in the vicinity of G.E.M.S. landfill relating to ambient air quality.

2. ACTION TAKEN:

A. On December 5, 1984 representatives of NJDEP, NJSHD and EPA/TAT met at Briar Lane, Gloucester Township, to conduct an indoor air quality monitoring/survey in homes on Briar Lane, and at the Fox Chase I and Fox Chase II developments.

100001

B. The monitoring team utilized [illegible] vapor analyzers (OVA) with flame ionization dete[illegible] photoionization detector, a Photovac Tip photoio[illegible]tector, and four personnel samplers with ca[illegible]collector tubes.

C. A total of 23 homes were su[illegible] monitoring team. Generally, results showed that t[illegible]ser to the landfill, (on Briar Lane and Fox Chase II) [illegible]er total organic levels than those located farthe[illegible] the landfill (in the Fox Chase I development).

D. On December 12, 1984 a meeti[illegible] between U.S. EPA the NJDEP at Edison, NJ to disc[illegible]nt situation and and future actions.

3. FINANCIAL STATUS:

A.	Total Funds (Extramural) for Mitigation Contract	$ 216,580.20
B.	Expenditures For Mitiga[illegible]s	
1.a	Amount obligated t[illegible]c Contract # 68-92-[illegible] DCN #220001 (3/7/[illegible]	15,000.00
1.b	Estimated expendi[illegible] Contract # 68-92-[illegible] DCN #220001	1,573.49
1.c	Balance remaining Contract # 68-92-[illegible] DCN# 220001	13,426.51
2.a	Amount obligated t[illegible] Environmental Ser[illegible] (Fence project) Contract # 68-92-[illegible] DCN #229002 (2/11[illegible]	60,000.00
2.b	Estimated expendi[illegible] Contract # 68-92-[illegible] DCN # 229002	60,000.00
2.c	Balance remaining Contract # 68-92-[illegible] DCN# 229002	-0-

3.a	Amount obligated to B.E.S. Environmental Services (Fence project) Contract # 68-92-0032 DCN# D2B062 (4/7/83)	$ 15,000.00
3.b	Estimated expenditures for Contract # 68-92-0032 DCN# D2B062	14,810.00
3.c	Balance remaining for Contract # 68-92-0032 DCN# D2B062	190.00
4.a	Amount obligated to Consulting Engineering Services Contract # 68-92-0025 DCN# 229003	1,591.20
4.b	Estimated expenditures for Contract # 68-92-0025 DCN# 229003	1,591.20
4.c	Balance remaining for Contract # 68-92-0025 DCN# 229003	-0-
5.a	Amount obligated to B.E.S. Environmental Services (Culvert project) Contract # 68-92-0033 DCN# D2B070 2/8/83	42,489.00
5.b	Estimated expenditures for Contract # 68-92-0033 DCN #D2B070	42,489.00
5.c	Balance remaining for Contract # 68-92-0033 DCN# D2B070	-0-
6.a	Amount obligated to B.E.S. Environmental Services (Culvert Project) 5/23/84 Contract # 68-92-0033 DCN# D2B070	50,000.00
6.b	Estimated expenditures for Contract # 68-92-0033 DCN #D2B070	50,000.00

6.c	Balance remaining for DCN Contract # 68-92-0033 DCN# D2B070	$ -0-
7.a	Amount obligated to B.E.S. Environmental Services Contract # 68-92-0033 DCN# D2B221	32,500.00
7.b	Estimated expenditures for Contract # 68-92-0033 DCN# D2B221	32,499.63
7.c	Balance remaining for Contract # 68-92-0033 DCN# D2B221	00.37
C.	Balance Of Unobligated Funding	13,616.88
D.	Estimated Total Expenditures to 8/27/84 For Mitigation Contracts	202,963.32
E.	Other Estimated Costs	
	a. TAT costs to date through 12/7/84	166,743.00
	b. EERU costs	
	i. Fox Chase II Dewatering Proposal	11,800.00
	ii. Fox Chase II Drilling	66,900.00
	iii. Fox Chase II Pump Tests	10,500.00
F.	Intramural Removal Costs Reported by Computer Accounting	
	a. Total Intramural Costs for Removal As of 7/31/84	24,337.53
G.	Total Estimated Expenditures to 8/27/84 Percentage of 1 M	$ 483,243.85 (48.32% 1M)

4. FUTURE PLANS AND RECOMMENDATIONS:

A. The conclusions of the December 12, 1984 meeting with NJDEP were to study the feasibility of installing a well-point system to remove leachate and the capping of the northeast side of G.E.M.S landfill to migitate the air pollution emanating from the site.

B. TAT II will provide information to EPA regarding the design criteria required to stabilize the northeast side of G.E.M.S. Landfill. Included in this will be a preliminary cost estimate for the project, a detailed material, equipment, and labor cost estimate and a detailed work schedule.

CASE PENDS X CASE CLOSED ____ SUBMITTED BY George H. Zachos

(TAT)

George Zachos, OSC
Response &
Prevention Branch

Date Released: Dec. 24, 1984

100005

U.S. ENVIRONMENTAL PROTECTION AGENCY

POLLUTION REPORT

DATE: April 18, 1983

Region II
Emergency Response and Hazardous
Materials Inspection Branch
Edison, N.J. 08837

(201) 321-6670 - Commercial
(201) 548-8730 - 24 Hour Emergency
340-6670 - FTS

TO: J. Schafer, EPA
R. Dewling, EPA
B. Metzger, EPA
Emergency Response Division
J. Marshall, EPA
L. Diamond, EPA
D. Karlen, EPA
F. Rubel, EPA
NRC
USCG 3rd Dist. (mep)/(info. only)
J. Stanton, NJDEP
K. Stoller, EPA
B. Ogg, EPA
TAT
C. Simon, EPA

POLREP NO.: Eleven (11)
INCIDENT NAME: Gloucester Environmental Management Service (G.E.M.S.)
SITE/SPILL NO: 29
POLLUTANT: Chemical Leachate
CLASSIFICATION: Major
SOURCE: G.E.M.S. Landfill
LOCATION: Gloucester Township, Camden County, New Jersey
AMOUNT: Unknown
WATER BODY: Holly Run Creek

1. SITUATION:

A. Groundwater continues to seep up on road and driveways behind Fox Chase II.

B. Contract for culvert construction signed 4/13/83.

C. Fence construction at Briar Lake was essentially completed on 4/14/83. (see Polrep No. 10, pg.2)

2. ACTION TAKEN:

A. Culvert construction activities began on 4/14/83. Initial work includes clearing of debris along Holly Run Creek approximately 600 feet upstream to Briar Lake. In addition, contractor obtaining proper utility clearances for excavating Briar Lane and drawings for stream encroachment permit.

3. FUTURE PLANS AND RECOMMENDATIONS:

A. TAT to conduct resistivity study at Fox Chase II and Briar Lake area to determine boundaries of contaminant plume.

B. Intramural costs for EPA/TAT expenses approaching $22,000. This cost represents extensive engineering services on well point system design, berm, fence and culvert design and construction monitoring, dewatering system design and slurry wall investigations.

C. According to the hazard ranking system, GEMS Landfill was one of three sites in New Jersey to receive a maximum groundwater score of 100.0. This ranking is based on observed releases, route characteristics, containment, waste characteristics and targets as defined in the National Oil and Hazardous Substances Contingency Plan.

CASE PENDS X CASE CLOSED ____ SUBMITTED BY George H. Zachos

George Zachos, OSC
Emergency Response Section
(TAT)

100007

050

The Actual Document is Available
for Review in the

G.E.M.S. Landfill

Site File

Site Files are located at the
U.S. Environmental Protection Agency
Region II
Superfund Removal Records Center
Edison, NJ

100008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

RECEIVED
11/14/83

OCT 6 1983

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Exemption from Six-Month Time Limit for GEMS Landfill, Gloucester Township, Camden County, New Jersey--ACTION MEMORANDUM

FROM: William N. Hedeman, Jr., Director
Office of Emergency and Remedial Response (WH-548)

TO: Lee M. Thomas, Assistant Administrator
Office of Solid Waste and Emergency Response (WH-562-A)

Issue

This memorandum requests approval of an exemption to the six-month time limit set forth in Section 104(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) in order to allow consideration of various immediate removal actions proposed for the GEMS Landfill site which are needed until remedial action commences at the site. The six month time limit for this site expired on August 7, 1983.

Background

Section 104(c) of CERCLA limits Federal removal actions to six months in duration unless three criteria are met: (1) continued response action are immediately required to prevent, limit, or mitigate an emergency; (2) there is an immediate risk to public health or welfare or the environment; and (3) such assistance will not otherwise be provided on a timely basis.

Discussion

On February 7, 1983, EPA initiated an immediate removal action with an approved ceiling of $170,000. The purpose was to fence sections of Holly Run Creek and Briar Lake, and to remove two undersized culverts at Briar Lake and replace one culvert at the inlet to Briar Lake with two larger culverts. This was done to reduce the threat of direct contact of the contaminated surface waters to residents in the area. The ceiling for this activity was increased to $202,500 on May 23, 1983, when the Regional Administrator authorized funds to complete the culvert work.

200001

On March 5, 1983, the Regional Administrator had authorized an immediate removal action to address leachate which was reaching the road adjacent to the Fox Chase II development adjacent to GEMS Landfill. An amount of $17,500 was spent on various temporary contamination and leachate control activities for Fox Chase II.

The continuing actions at this site meet the criteria for an exemption from the six-month time limit as follows:

1. Continued response actions are immediately required to prevent, limit or mitigate an emergency.

   Contaminated groundwater is continuing to seep onto an adjacent roadway in the Fox Chase II development. In addition, drinking water wells in the area are threatened. Immediate removal actions taken earlier were of a temporary nature; additional actions are expected to be undertaken if this time-limit exemption is granted.

2. There is an immediate risk to pubic health or welfare or the environment.

   The site is in a populated area. Landfill related material has already surfaced on a road immediately behind a housing development, prompting an expansion of the original removal action. Numerous homes in the area use well water which is at risk of contamination.

3. Assistance will not be otherwise provided on a timely basis.

   Responsible parties have declined to take action at this site. Remedial activities are expected to generate the required data for the feasibility study which will evaluate remedial alternatives. The design and implementation of the selected remedy will begin in FY 1985 with completion by the summer of 1985.

Recommendation

I recommend that you approve an extension for the GEMS Landfill area to be effective until July 1985 when remedial actions are implemented. Groundwater testing and leachate control system design is currently in process. This approval will facilitate future Agency action to the extent that immediate removal expenditures are approved by the appropriate official.

You may indicate your approval by signing below.

Approve: Jack McGraw Acting RA Date: 10-18-83

Disapprove: _____ Date: _____

200002

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

JUL 18 1983

G-19-0002

CERCL Act Immediate Removal Actions - GEMS Landfill

Jacqueline E. Schafer
Regional Administrator

William N. Hedeman, Jr., Director
Office of Emergency & Remedial Response (WH-548)

Having reviewed the attached briefing document and memo from Barbara Metzger concerning removal actions required at GEMS Landfill, Gloucester Township, New Jersey, the following request is made for additional funding to assess the extent of contamination and to mitigate the problem:

Fox Chase Drilling Plan: To determine the degree of contamination behind Fox Chase II and to provide hydrologic parameters to design the abatement system	$ 74,000
GEMS Drilling Plan: To evaluate the threat posed to the drinking water sources under and near GEMS Landfill	$162,000
Holly Run Creek: Treatability study	$ 70,000
Leachate Abatement	
Leachate collection system behind Fox Chase II	$ 51,500
Treatment of leachate extracted behind Fox Chase II	
Treatability Study	$ 90,000
Treatment (3 months)	$220,000
	$667,500

Authorization

Prior to implementation of the two drilling plans, assessment of the extent of contamination, and the design and selection of the abatement method, a modification of the NJDEP/EPA contract will be made.

In summary, we request authorization to expend up to an additional $667,500 under the CERCL Act to conduct removal actions at GEMS Landfill.

Attachment

cc: H. Van Cleave, WH-548B
: B. Ogg
: W. Mugdan

ES:ERHMI:FRubel/Zachos:340-6642 5/27/83,6/23/83 CONCURRENCES

SYMBOL	ES:ERHMI	ES:ERHMI	ES:ERHMI				DRA	RA
SURNAME	ZACHOS	ELLIOT	RUBEL				DEMLING	SCHAFER
DATE								

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

200003

DATE: JUL 11 1983

SUBJECT: CERCL Act Immediate Removal Actions - GEMS Landfill

FROM: Barbara Metzger, Director
Environmental Services Division

TO: Jacqueline E. Schafer
Regional Administrator

THRU: Dick Dewling
Deputy Regional Administrator

On March 5, 1983 you authorized the use of up to $50,000 of CERCL Act Trust Fund money for action to mitigate a potential hazard involving contaminants seeping up through, and adjoining the road immediately behind the Fox Chase II housing development, approximately two-hundred and fifty feet from the GEMS Landfill, Gloucester Township, New Jersey. As of this date, approximately $17,500 has been expended on the "leachate control" project and the remaining $32,500 has been transferred to complete the "culvert project" (Attachment 4). A description of the work accomplished with this funding is attached (Attachment 1).

We have documented a verbal agreement (Attachment 2) with NJDEP to expand the scope of work relative to the existing NJDEP/EPA removal action contract. We have not, thus far, modified the NJDEP/EPA contract, because we have not fully evaluated what remedy the problem behind Fox Chase II requires, nor its cost. We have been asked by Headquarters to request an increase in the Trust Fund removal action (Attachment 3) authorization for GEMS to cover whatever we estimate will be needed.

Attached is a description of a series of activities which we want to request removal funding for. Headquarters has preliminarily indicated their receptiveness to increasing the scope of the removal action at GEMS in order to include those activities which should be expedited.

A summary of the activities which we may want to request removal funding for, follows.

Step I - Define The Problem

Fox Chase II

A prerequisite to modifying the NJDEP/EPA contract, is to determine the degree of contamination behind the Fox Chase II housing development. This can be accomplished by the implementation of the "Fox Chase II Drilling Plan" (Attachment 1) which will also provide hydrogeologic field data specific to this area. Estimated cost for this project is $74,000.

200004

EPA Form 1320-6 (Rev. 3-76)

Step II - Alernative Solutions to Fox Chase II Problem

Once the results of the drilling program are available, and potential health threats are better defined, one or more of the following alternatives may be selected to mitigate the groundwater condition behind the Fox Chase II development.

1. Cut off wall adjacent to Fox Chase II.
   Estimated Cost $80,000 (20 ft. deep)
   $40,000 (10 ft. deep).

2. French drain adjacent to Fox Chase II.
   Estimated Cost $53,000.

3. Shallow well point system adjacent to Fox Chase II.
   Estimated Cost $54,000.

4. Interceptor well adjacent to GEMS Landfill.
   Estimated Cost $19,000.

Attachment 1, "Briefing Document and Scope of Work" provides additional information on the four alternative projects listed above.

The cost for an immediate removal action to mitigate the leachate problem behind Fox Chase II depends on the alternative(s) used, and the method of disposal of the extracted groundwater. Assuming that only one abatement option will be used at an average cost of $51,500 ($80,000 + $53,000 + $54,000 + $19,000/4), the following further options are available:

Step III - Disposal of Collected Groundwater

1. No treatment -

Under this option, the extracted groundwater will have to be either discharged into (a) Holly Run Creek, or (b) pumped to the top of the landfill. Of these, the latter is the least desirable since it will tend to flush additional chemicals from the landfill. Under such an option, the estimated cost will be limited to a drilling program to better define the problem and solution ($74,000), plus the cost of an average abatement option ($51,500), for a total of $125,500.

2. Treatability -

Should sampling results reveal high pollutant concentrations in the extracted groundwater, then it will be necessary to determine the best method of treating the contaminated water. The cost of this study is estimated at $90,000. Once the most effective method of treatment has been selected and implemented, the extracted groundwater could be treated.

3. Contaminated Groundwater Treatment System -

(a) Treatment for 3 months - Assuming that groundwater will have to be extracted, and assuming this is required for three months, the cost for this treatment (as a removal action), including system installation, is estimated to be $220,000.

(b) Treatment for 1 to 2 years - Although any groundwater collected initially requiring treatment may improve in quality, it is more likely that extended treatment will be required. This may also depend upon the seasonal height of the groundwater table. The State of New Jersey, as other states have, has indicated a preference to minimize operation and maintenance costs. Should an impasse occur on the issue, we have three choices: insist that this is an O&M cost which must be picked up by the state in total; include the cost as part of the remedial action project expenditures; include the cost as part of the removal action project. Note that this removal action already involves at least 50% cost sharing on the part of the state. Our estimate for treatment costs for one to two years, is an additional $60,000 to $140,000 respectively, beyond the funding authorization requested here.

Step IV - Drinking Water Aquifer

Three principal aquifers supplying drinking water to residents of the area underlie the GEMS Landfill. To evaluate the potential for contamination of drinking water supplies, $162,000 would be required to implement the "GEMS Drilling Plan" (Attachment 1). This would more broadly determine the levels of contamination in the groundwater, which is the source of potable water for some residents in the area, and adds to the important data base concerning groundwater flow.

Step V - Holly Run Creek

Holly Run Creek is a potential source of organic chemicals in the air, especially at Briar Lake. These organics may impact water quality of a lake further downstream which is used for recreational purposes. A sampling program would be undertaken to determine the presence of organics in Holly Run, Briar Lake, and the recreational lake downstream. If results warrant, a treatability study would be undertaken. The sampling and treatability study cost for this work is estimated at $70,000.

Summary of Funding Required

Total funding required for the Fox Chase II drilling plan ($74,000), surface water evaluation/treatability study ($70,000), groundwater abatement project (average cost $51,500), groundwater treatability study ($90,000) and treatment of the extracted groundwater ($220,000 for 3 months) is $505,500.

The "GEMS Drilling Plan" is an activity which meets the CERCL Act definition of removal action ("actions...to monitor, assess, and evaluate the...threat of release....") and would in any case be required to better define the extent of the GEMS site problem. It would be a positive step in protecting the public from drinking water contamination. This would add $162,000 to the above removal action cost.

In summary, the above projects would require that we request an additional $667,500 ($505,500 +$162,000) under the CERCL Act to mitigate the leachate problem behind the Fox Chase II development, provide data on potential contamination of the drinking water aquifer in the area adjacent to GEMS Landfill, and assess the necessity/feasibility of treating Holly Run Creek with doses of an oxidizer to destroy organic chemicals.

Connie has concurred that the projects described would be of value to our overall efforts at GEMS.

Before we request additional funds for the increased scope at GEMS, I wanted to advise you and receive your thoughts on this approach. Once we apprise Headquarters of the proposed scope and cost, and additional Trust Funds are authorized, we will discuss the details with the State, and revise the NJDEP/EPA removal action contract for GEMS.

Attachments

cc: Connie Simon, 2AWM (w/attach.)
Del Karlen, 2ORC-WGL (w/o attach.)

ATTACHMENT 1

TAT-02-F-00485

April 13, 1983
Revised: June 22, 1983

BRIEFING DOCUMENT & SCOPE OF WORK
G.E.M.S. LANDFILL, CAMDEN COUNTY, NEW JERSEY
IMMEDIATE REMOVAL ACTIONS

Project Requested By: George Zachos, OSC, G.E.M.S. Landfill
Project Officers: John Bee, P.G., Rodolfo Hafner, TAT II
Quality Assurance Officers: Dennis Coronato, Tom Hughes, TAT II
TDD#2-8212-25D

200008

I. EXECUTIVE SUMMARY:

The following document is a briefing document to outline the immediate removal actions taken at G.E.M.S. landfill, the need and scope of work for investigation to support further emergency activities and a summary of the scope as well as projected costs of these alternatives being considered by the Emergency Response Section, USEPA Region II.

Primary concern at the present is focused on the northeast portion of G.E.M.S. Landfill, at Fox Chase II, where potentially contaminated groundwater is issuing from springs along the rear access road and near the basements of residences in this housing development.

IMMEDIATE REMOVAL - Actions Taken:

Berm:

A sand berm covered with plastic sheeting was constructed on March 7, 1983 as a temporary barrier to redirect potentially contaminated surface runoff from the landfill and adjoining areas that was issuing from springs along the access road to Fox Chase II and in the vicinity of the basements of these residences.

Actual Cost - $1,573.79

Fence:

A fence at Fox Chase II was completed on March 23, 1983, approximately 900 ft. long and 6 ft. high intended to prevent accidental direct contact with contaminated surface waters of Holly Run Creek and the adjacent potentially contaminated fill between the landfill and the residences of Fox Chase II.

A fence has been constructed around the perimeter of Briar Lake and on both sides of Holly Run Creek in the area of Briar Lake developments; approximately 3,000 ft. long, it is intended to limit access to Holly Run and Briar Lake to the northwest of the landfill. This portion of the fence was completed by June 10, 1983.

Estimated Final Cost - $75,000.

Surveying:

On March 29, 1983, Consulting Engineering Services, Inc. provided a topographical survey of Fox Chase II and Briar Lake that defined the property lines and elevations for the installation of the fencing and the design of a dewatering system, adjacent to Fox Chase II.

Actual Cost - $1,600.

Preliminary Engineering Design Package:

Moretrench Environmental Services - Preliminary engineering design package for the emergency dewatering of the property adjacent to GEMS landfill (approximately $12,000).

Date for Resitivity Report:

Surveys, drawings and other services as part of the preparation of the resitivity report ($1,880).

Monitoring Wells:

Unclog existing monitoring wells in the vicinity of Fox Chase II development ($1,230).

Survey map to include positions and elevations of existing monitoring wells and piezometers in the vicinity of Fox Chase II development ($1,230).

Culvert On Holly Run:

Two parallel 90 feet sections of an oval culvert (83" x 67") were installed at the inlet to Briar Lake to reduce the threat of flooding in the area from the contaminated surface water. This project was completed on June 16, 1983.

Estimated Cost - $125,000.

21" Storm Sewer: Recommended Action for Camden County

As a prerequisite for improvement of the flooding problem of Fox Chase II, a 21" diameter storm line draining the adjacent Fox Chase I development of approximately 75 acres, should be rerouted by Camden County into a storm sewer being constructed along Erial Road.

The 21" storm line at present terminates in fill adjacent to the rear access road of Fox Chase II, without adequate provision for distribution of a peak discharge of 11,000 gallons/minute for a design storm of 100 year frequency and 24 hour duration. Any dewatering system proposed close to Fox Chase II will be severely impacted if this excessive inflow continues. Alternatively, the impact of this inflow may be found during investigation to be beneficial, producing during storms a mounding of relatively fresh water between Fox Chase II and the landfill that could divert contaminated groundwater away from Fox Chase II.

LIMITATIONS OF AVAILABLE DATA:

Monitoring for hazardous materials has been conducted by New Jersey Department of Environmental Protection (NJDEP) and the Camden County Health Department. Hazardous chemicals have been identified in the nearby groundwater of the surficial Cohansey Aquifer, in the surface water, in the air, and in the soils of the landfill. The major group of hazardous substances found in the air and water near the site are volatile organics. Many are EPA Priority Pollutants and are toxic to humans. Several are carcinogens. The principal hazardous substance found on the landfill surface is DDD, a degradation product of the pesticide DDT. Several heavy metals have been identified as contaminants. At present, the following limitations of data prompt further investigation:

Insufficient information exists on contaminant distribution with which to assess the magnitude of the public health problems with regard to actual and potential private well contamination, the distribution of surface water and soil contamination, and the volatile and explosive hazards near the landfill and in the basements of local homes.

Limitations of data on aquifer characteristics such as permeability/transmissivity and storativity, aquifer interconnection, directions of groundwater flow, and hydrologic mass balance affect the reliability of any consideration of alternatives, especially those involving dewatering.

Data on groundwater contamination are restricted to the surficial aquifer, while three major aquifers are located under the site. The analysis results appear variable and inconsistent. For example, volatile organic concentration varied in one potable well from 890 ppb (above the state criteria for well condemnation) to below detectable limits, within two months.

These limitations prompted the development of two drilling plans; a drilling plan addressing those concerns specific to Fox Chase II and a G.E.M.S. Landfill Drilling Plan addressing concerns of the other areas and drinking water supply aquifers impacted by the landfill.

FOX CHASE II DRILLING PLAN:

The Fox Chase Drilling and Sampling Plan is designed to investigate the alleged public health hazards at Fox Chase II and to supply data to support an evaluation of the various alternative abatement strategies proposed. This emergency plan will take three weeks of drilling, but the first borehole will begin to yield data on the existence of a confining layer essential to a slurry trench alternative and data on levels of groundwater and surface water contamination to support risk assessment. Following the drilling plan, a pumping test lasting 3 days will be conducted, that will yield the necessary information to determine the response of the aquifer to the various dewatering alternatives, such as a french drain, slurry trench, well point system, or interceptor wells.

Estimated Cost - $74,000.

G.E.M.S. Landfill Drilling Plan:

In addition to wells installed adjacent to the Fox Chase II development, wells will be installed at 5 other locations on the perimeter of the landfill. Emplaced at multiple depths in the three principal potable water aquifers of concern to the U.S. EPA and NJDEP, the wells will be measured and sampled to evaluate hazards associated with the potential contamination of drinking water supplies. The scope of the investigation will include measurement of the potentiometric head in each aquifer, the distribution of groundwater contamination, and the direction and rate of groundwater flow. The groundwater will be monitored at multiple depths by installing nested wells. A report of well installation will be prepared which documents the hydrogeologic conditions of the site as it relates to the possible contamination of the drinking water for the residents that rely on wells for potable water.

Both drilling plans are detailed, have been reviewed, are supported by 1900-49 contracting documents, and are ready to be implemented.

Estimated Cost - $162,000.

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Treatability Studies

The design of treatability studies to investigate alternative systems for treatment of contminated waters at GEMS will incorporate certain preliminary investigations including characterization of the untreated contaminated water flow rate and composition. Flow rate will be characterized in terms of both the daily average flow (gpd) and estimated maximum flow (gpm and gpd). The contaminated water composition will be characterized in terms of the different species in solution, eg. specific volatile or base-neutral organics heavy metals, and pesticides, as well as the ranges in the concentration of each of these species. These characterization data will be developed as part of the other elements previously discussed under this overall investigation, ie. the drilling plans.

The discharge constraints tthat will be imposed on the effluent frorm any treatment system will be established by reviewing the untreated contaminated water characterization data with the appropriate New Jersey State and local regulatory agencies. These reviews will establish effluent criteria for various possible discharge options, including a direct surface discharge to Holly Run Creek, discharge to the local sewage treatment facility, or groundwater recharge. The latter option will be evaluated in the context of the overall groundwater strategy developed for GEMS and the Camden County area.

With the results of the preliminary investigations, the details of the spoecific treatability studies to be conducted as part of this overall investigation will be established.

Based on the data that are currently available for the contaminated waters at GEMS, it appears that treatment will be required for various organic contaminants and heavy metals. Using these data as a basis, it is assumed that treatability studies will be necessary to develop the design parameter and cost estimates for a treatment system consisting of packed-column air stripping towers followed by a granular activated carbon system. Such a pilot system would be either trailer-mounted or constructed on-site and operated for approximately one month to collect the necessary data for design of a full-scale system. It is estimated that the capacity of the pilot system would be 25 gpm, and that the total costs for the system (equipment, O&M, testing, and sample analyses) for the pilot testing program described above are

ALTERNATIVE # 1 - PARTIAL CUT-OFF WALL

Description of Alternative: A cut-off wall is a cement, clay, or bituminous, relatively impermeable barrier usually between 3 ft. to 6 inches thick that is emplaced by either a trenching machine, an excavator or by pressure injection to depths less than 40 ft. and by a clam shell excavator to greater depths. The cut-off wall usually keys into an impermeable confining layer that limits downward migration of contaminants.

Data Needs: Soil profile†, grain size distribution†, compatibility of leachate with cut-off wall materials†, leachate distribution†, and site hydrology.†

Feasibility: The cut-off wall being considered would run parallel and perpendicular to the access road behind Fox Chase II, but could only be considered if a low-permeability confining layer was found during drilling at Fox Chase II. Local well logs do not show a shallow confining layer.

Advantages: If a confining layer is found at 10 ft., it would present one of the least expensive alternatives to exclude alleged groundwater contamination. The cut-off wall need not encircle the development, but would form a barrier to contaminant flow from the landfill and allow fresh water to flow in behind the wall.

Disadvantages: Existence of shallow confining layer unlikely.

Time Frame: Completion one month from site work initiation. (For 800 ft. of wall to 20 ft. depth).

Cost:

800 ft. long wall, 10 ft. deep	$40,000.
" " " 20 ft. deep	$80,000.

(@ $5/face foot, interior drains not included).

Suppliers: ICOS, Sollatanche & Rodeo, Geocon, Brenneman, Memphis Construction, and ECI.

†Data not available.

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ALTERNATIVE # 2 - FRENCH DRAIN

Description of Alternative: A french drain is a drainage pipe with openings along its length to allow water to enter and be carried off by gravity. These pipes are either open-joint concrete pipe, perforated corrugated metal, or asbestos cement pipe installed in a bed of pervious material. A recent survey of elevations at Fox Chase II and the nearby stream elevations indicate the low lying nature and poor drainage gradients at the site. Thus, to provide effective drainage, a drain emptying into a pumped sump is required, and pumping costs will be incurred. Estimatesindicate french drain 650' long beside the rear access road to Fox Chase II draining at 50 gpm with lateral drains running under the road up to the basements of the houses is needed to pull the water table down 6" under the residences.

Data Needs: Soil profile†, compatibility of leachate with pipe materials†, leachate distribution†, site hydrology†, groundwater levels†, structural stability of soils†.

Feasibility: Adequate slopes along the pipe are necessary to provide sufficient flow in the pipe, along with adequate soil stability during excavation for pipe support of the trench wall.

Advantages: The system is installed as a "permanent" structure with a lifespan usually exceeding 20 years. If an adequate slope exists for the conveyance of water to a receiving body, the system can be cost effective by eliminating pumping operations. However, this is not the situation at Fox Chase II, and pumping from a sump is required.

Disadvantages: Flows can be limited by soil accumulation within the gravel bed, at the pipe openings, and in the pipe invert. A trench deeper than five feet in this soil could result in high costs of sheeting and bracing the trench walls. The inherent linear nature of the system results in a rigid network of laterals and mains culminating at one point with limited flexibility for expansion. Disposal of collected leachate may incur treatment costs.

Time Frame: Operational in 3 weeks.

Cost:

Construction and 3 months operation	$52,757
Treatment costs for 3 months	$220,000

Suppliers:

Drain: Asbestos Cement and Concrete Pipe
Interpace, Concrete Pipe Association of New Jersey
Grey Concrete Pipe Company, Johns-Manville.

Corrugated Metal Pipe
ARMCO Construction Products, Lane Metal Products Company, Inc., National Corrugated Steel Pipe Association.

Pump: ITT Marlowe

Treatment Systems: see treatment alternative

200014

† Data not available.

ALTERNATIVE # 3 - SHALLOW WELLPOINT SYSTEM CLOSE TO FOX CHASE II

Description of Alternative: From calculations based on values for permeability, aquifer thickness, and storativity cited in the literature, a shallow well point (<15 ft. deep) pumping at 16 GPM will draw down the water table in a cone 3'6" at its center (assuming a 100% efficient well) and with a 6" drawdown 90 ft. away. A series of shallow wells along the 600' length of the rear access road to Fox Chase II would pull the water table down 6" below the ground surface under the residences.

Data Needs: Soil profile†, grain size distribution†, pump test (storativity and transmissivity)†, leachate distribution†, and site hydrology†.

Feasibility: Any dewatering system operating at Fox Chase will involve pumping costs.

Advantages: The potentially contaminated springs along the access road and under the basements would be pumped dry. Fresh water would be pulled into the area from the northeast, flushing potentially contaminated soils.

Disadvantages: The radius of influence of such a system is calculated to be 4,800 ft. Contaminated groundwater would be pulled from the landfill. Disposal of pumped water may incur treatment costs.

Time Frame: The system will be operational 5 weeks after construction is initiated; drawdown of the water table to the required depth will be completed in an additional 7 days.

Cost:

Wells and Piping		$40,000
Pump Operation & Maintenance for 3 months	TOTAL	14,000 $54,000
Treatment cost for 3 months		$220,000

Suppliers: Pump: A. C. Shultes, Layne-New York, Empire, Moretrench, Johnston - ITT Marlow, APCO, Worthington, Aurora.

Treatment Systems: see treatment alternative

†Data not available.

200015

ALTERNATIVE # 4 - INTERCEPTOR/EXTRACTION WELL CLOSE TO LANDFILL

Description of Alternative: A well pumping at 200 GPM close to the landfill, near Fox Chase, will have a radius of influence of 4800 ft. (.9 mile). At its center the water table will be pulled down 14 ft. (17.5 ft. allowing for 80% efficient well). At every log cycle of distance to the well the water table would be pulled down 3.5 ft. Thus at 4.8 ft. from the well: there will be 10.5 ft. drawdown, at 48 ft.: 7 ft. drawdown, at 480' (under the houses of Fox Chase) 3.5 ft. drawdown.

Data Needs: To provide reliable drawdown predictions, field data is required on soil profile† and hydrology including transmissivity & storativity†. (All data used to calculate drawdown is at present theoretical, based on aquifer parameters cited in the literature).

Feasibility: Depends upon the operation & maintenance costs determined by the effectiveness of treatment and the disposal limitations for extracted water. The cone of influence of the well would reach under the landfill and draw contaminated water.

Advantages: The well would act as an interceptor well for contaminants flowing into Holly Run and towards Fox Chase. The well would reduce potentiometric heads in the Cohansey (water table) aquifer and may induce groundwater from lower aquifers to flow upwards into the Cohansey thereby intercepting contaminants from the landfill and preventing contamination of drinking water supply wells in the area.

Disadvantages: This alternative shares the disadvantages of all dewatering systems near the landfill, that contaminants from the landfill will be pulled into the well.

Time Frame: The pumping well to be drilled for the pump test at Fox Chase II can be used to act as an interceptor well.

Cost:

Well Construction	$Pump test well used	
Turbine Pump	$ 14,000	
Operation & Maintenance for 3 mo.	4,800	
Total	$ 18,800	(not inclusive of treatment)
Treatment costs for 3 mo.	$220,000	

Suppliers

Drilling: A. C. Shultes, Layne-New York, Empire

Pumps: Johnston, ITT Marlow, APCO, Worthington Aurora.

Treatment system: see treatment alternative

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† Field Data Not Available, Drilling/Pumping Investigation Required.

200016

ALTERNATIVE # 5 - CONTAMINATED GROUNDWATER TREATMENT SYSTEM

Description of Alternative: All dewatering systems emplaced at Fox Chase II will draw contaminated water. The radius of influence of a dewatering system in the Cohansey is estimated to be 4800 ft. Treatment of contaminated groundwater will consist of those unit processes required to treat the contaminants (organics, pesticides, and heavy metals) in 100 gpm of contaminated groundwater to acceptable discharge concentrations to be established through permit negotiations with the appropriate NJDEP and local regulatory authorities. While the details of this treatment system are subject to confirmation by pilot testing, it is forecasted that the treatment system will consist of packed column air strippers followed by granular activated carbon. No emission controls on the packed column exhaust has been considered at this time. Should such control be necessary, the appropriateness of the stripper before the liquid phase activated carbon system must be evaluated for its cost-effectiveness versus the use of liquid phase activated carbon alone. Without air stripping, high replacemennt costs for carbon may be experienced.

Data Needs: The data needs include the concentration of contaminants in the influent to the system, the variation with time, the performance efficiencies and concentrations of the contaminants in the effluent from each unit process. For air strippers, additional data requirements include bed volume and dimensions, type of packing, air-to-water ratio, power requirements, and costs. For the activated carbon system, additional data requirements include bed contact time and application rate, carbon exhaustion rate, power requirements, and costs.

Feasibility: The feasibility of using the proposed system for treatment of the organic, pesticide, and heavy metal contaminants in the groundwater is well established by prior experience (see Treatability Manual-Volume I. Treatability Data, EPA-600/2-82/00/a, September,1981).

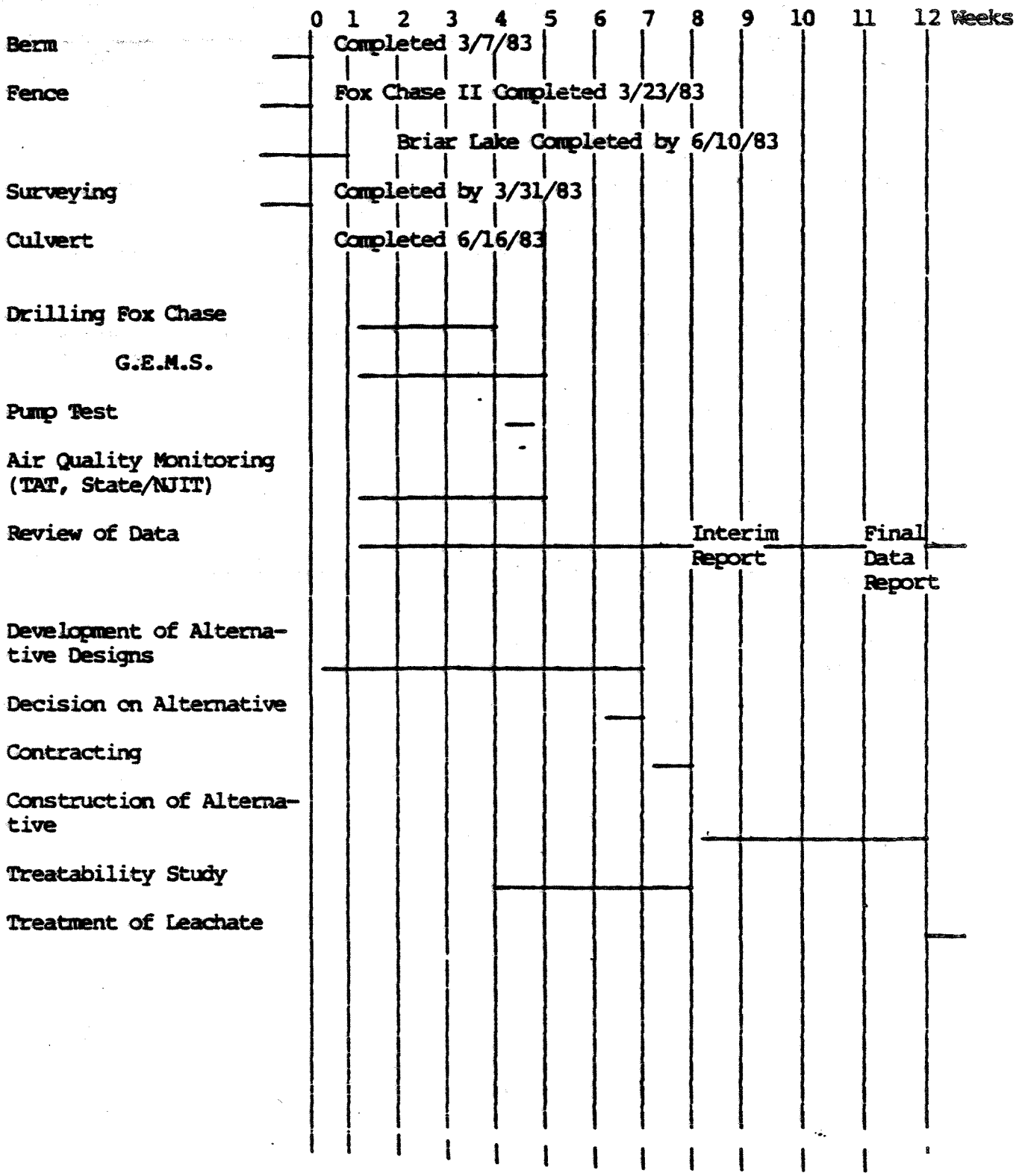
Advantages: Both of the proposed unit operations have the advantages of being proven, reliable systems with acceptable operation, maintenance, and safety requirements, and minimal environmental effects.

Disadvantages: As proposed above, there will be an uncontrolled atmospheric emission from the air stripper, which will have low concentrations of various volatile organics. Exhausted activated carbon will need to be replaced and regenerated off-site.

Time Frame: Upon completion of the pilot studies, it is expected that the selected system can be designed, erected, and started-up within 2 months.

Cost: The estimated cost for the proposed system is $220,000 for 3 months of operation.

IMMEDIATE REMOVAL ACTION PROJECT SCHEDULE



200018

MAR 10 1983

Dr. Marwan M. Sadat, Administrator
Hazardous Site Mitigation Administration
New Jersey Department of
Environmental Protection
Division of Waste Management
1911 Princeton Avenue
Trenton, NJ 08625

Dear Dr. Sadat:

This will respond to your letter of March 4, 1983 and will provide interim groundrules following our verbal agreement to proceed with certain emergency work occasioned by the release of leachate onto the road behind the Foxchase II Development, near the GEMS landfill, Gloucester, New Jersey. EPA and New Jersey will soon amend the existing immediate removal action contract to cover this additional work, as details become further defined, and on the same cost share and other basis that the work is occurring under the present contract.

If the state chooses to hire (a) contractor(s), these costs, I am told, will not be considered for credit toward the state share. State staff time and expenses will continue to be creditable if, and only if, authorized by the OSC (George Zachos) and confirmed in writing (through at least his signature of EPA form 1900-55 on the day that expenses are incurred) in accordance with the existing contract.

Sincerely,

Fred M. Rubel
Chief
Emergency Response & Hazardous
Materials Inspection Branch

bcc: G. Zachos, 2ES-ERHMI
D. Karlen, 2RC
H. Crump, WH-548B
C. Simon, 2AWM

200019

ES:ERHMI:FRubel:cvs:3/8/83:x6657

	CONCURRENCES						
SYMBOL	ES-ERHMI						
SURNAME	RUBEL						
DATE	3/9/83						

EPA Form 1320-1 (12-70)

OFFICIAL FILE COPY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 1 1983

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: State Contract for GEMS Landfill Immediate Removal Action

FROM: Hans J. Crump, Chief
Response Operations Branch (WH-548-B)

TO: Fred Rubel, OHM Coordinator
EPA, Region 2

The EPA/State Contract for the immediate removal action at GEMS Landfill was signed on Feburary 14, 1983. On March 5, 1983, your Regional Administrator approved an additional $50,000 for immediate removal activities not covered under the Contract's Scope of Work. The additional activities included debris removal from around residences adjacent to the landfill, and leachate control measures.

Please submit immediately the necessary technical information (changes/additions to scope of work) and estimated costs necessary to appropriately amend the contract. This immediate removal action was originally approved on the basis that the State of New Jersey would cost share at least 50% of all costs for this removal action. All activities not covered under the contract, as is, can not be considered authorized unless included in an amendment to the contract.

200020

RECEIVED
APR 6 1983

...se
...on Branch

DATE June 23 1983

ATTACHMENT 4

SUBJECT Transfer of CERCL Act Trust Fund Monies from Leachate Control Project to Immediate Removal Action at GEMS Landfill, Gloucester, New Jersey

FROM Barbara Metzger, Director
Environmental Services Division

TO Jacqueline E. Schafer
Regional Administrator

THRU: Dick Dewling
Deputy Regional Administrator

On March 5, 1983 you authorized $50,000 (Attachment 1) to take immediate action to limit the leachate reaching the road adjacent to Fox Chase II homes. As of this date, approximately $17,500 has been expended on the following projects:

1. Moretrench Environmental Services - Preliminary engineering design package for the emergency dewatering of the property adjacent to GEMS landfill (approximately $12,000).

2. B.E.S. Environmental Services, Inc. -

   (a) Surveys, drawings and other services to assist in the preparation of the resistivity report ($1,880).

   (b) Unclog existing monitoring wells in the vicinity of Fox Chase II development ($1,230).

   (c) Survey map to include positions and elevations of existing monitoring wells and piezometers in the vicinity of Fox Chase II development ($1,230).

3. Mid-Atlantic Refinery, Inc. - The sweeping down of contaminated areas, the construction of a dike, and the dredging of existing path to allow discharge of contaminated water into Holly Run ($1,573.49).

At this time, we request authorization for transfer of the remaining $32,500 ($50,000 - $17,500) to complete the project authorized by headquarters involving the installation of two culverts at Briar Lake to prevent the flooding of adjacent homes with contaminated water. It is imperative that this project be expedited to prevent any accidents due to the open trench (approximately 25 ft. x 90 ft.) which EPA excavated in order to finalize the immediate removal action already started.

The culvert will otherwise remain open for 5 weeks because headquarters (Karen Clark, OLEC) prefers not to address the $32,500 until the entire contract can

200021

be modified to include the $32,500 and the major revision covered by my memo initiated 5-2-83. Unless these contract modifications are separated, the culvert will not be emplaced for a minimum of 8 weeks. This is unacceptable from a safety and financial standpoint. Unless this transfer of funds is authorized without delay we will be unable to complete an immediate removal action for an extended time, leaving a gaping trench subjecting the local populace to a safety (fall) hazard. Costs will continue to be incurred although project completion will be much delayed.

The transfer of the above amount will increase the ceiling for the immediate removal action from $170,000 to $202,500. The increase in cost is due to the changes in the scope of work from the original Ten Point Document, subsequent contract modifications (Attachments 2 and 3) and unforeseen field conditions.

In summary, the cost increase can be attributed to the additional placement of approximately 700 ft. of fence to limit public access to contaminated areas, other changes as detailed on the Fence Contract Modification, and to the stringent design changes required by NJDEP. These changes greatly increased the scope and price of the project. The need to design for a 100-year storm changed the requirements from a single 60 ft., 22" x 36" culvert to two 90 ft., 63" x 87" culverts. This increase in size greatly increased the cost of excavation, bedding, backfill and riprap. The completion of the Stream Encroachment Permit further increased the engineering cost via the need of survey, drawings and associated calculations for the design. Delays caused by the various utilities (gas, water, sewer, telephone, electric and TV) in locating and disconnecting their respective lines, delivery of culvert sections, and heavy rains which caused flooding with its associated construction related problems, further increased the cost.

The State of New Jersey has agreed to modify the existing removal action contract to include this change.

Attachments

CONCUR: _____ 5/21/83
(signature/date)

NON CONCUR: _____
(signature/date)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

For: George Zachos
EPA Region II
3 pages to follow

MAR 10 1983

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

From: Mark Mjoness
ERD
EPA HQ.

MEMORANDUM

SUBJECT: Ceiling Increase for Immediate Removal Actions at GEMS Landfill, Gloucester Township, New Jersey - ACTION MEMORANDUM

FROM: H. D. Van Cleave, Acting Director
Emergency Response Division (WH-548-B)

TO: William N. Hedeman, Jr., Director
Office of Emergency and Remedial Response (WH-548)

On February 8, 1983, approval was given to initiate immediate removal actions at the GEMS Landfill site in Gloucester Township, New Jersey. The ceiling for extramural (contractor) expenses is currently $170,000. On March 5, 1983, the Regional Administrator approved immediate removal actions at the site for the collection and disposal of contaminated debris, construction of an 800 foot berm to intercept leachate from the landfill and adjacent area, and dredging of an existing erosion ditch. The ERT is assisting the OSC to study the possible construction of a drainage system. These actions are eliminating the threat of direct contact with hazardous substances to the nearby residential population.

A ceiling increase of $50,000 is necessary to complete this removal action. This increase will result in a new project ceiling of $220,000 for extramural costs. The EPA/State contract for this immediate removal will be amended appropriately to cover the additional scope of work and State cost share. You may show your concurrence or non-concurrence on the lines below.

Concur: [signature] Date: 3/10/83

Non-Concur: _____ Date: _____

200023

MAR 10 1983

FACT SHEET
GEMS LANDFILL
IMMEDIATE REMOVAL ACTION

Site Description

- Sixty acre landfill which received a variety of hazardous organic liquids between 1969 and 1974. Materials were deposited in pits or trenches below the water table. The quantity of materials has not been verified.

- Numerous fires, oil spills and complaints of strong odors were reported periodically during the course of operations.

- Landfill cap consists of sludge material contaminated with 40 ppm DDD, a suspected human carcinogen.

- Holly Run Creek, a small stream draining the site, to the east and north, flows into nearby Briar Lake. Leachate flows and surface runoff collect in a ditch along the northeast side of the landfill, then discharge into Holly Run. Holly Run and Briar Lake are contaminated with organic solvents, with an oily red film on the surface.

- Compounds identified as being present in GEMS leachate include benzene, toluene, ethylbenzene, chloroform, trichloroethane, and trichloroethylene.

Threat

The surrounding populations may be affected by numerous exposure routes, but only the most serious will be addressed here:

- Direct Contact - The public has unrestricted access to leachate seeps and contaminated surface waters leaving the site. Chemical concentrations range from 10 to 50 ppm in surface waters from Briar Lake upstream to the site.

  Children have been reportedly playing near Holly Creek and Brian Lake, as well as on the landfill, and thus may be exposed to carcinogens and other hazardous substances.

  As Holly Run enters Briar Lake it periodically backs up and threatens to flood nearby basements with contaminated water causing a possible health hazard. On March 4-5, 1983, unusually high ground water level caused leachate from the landfill to seep into backyards, streets, and driveways of an adjacent subdivision, Fox Chase II.

- Drinking Water Exposure - Extensive well water monitoring and well sampling has been conducted by New Jersey Department of Environmental Protection (NJDEP) with results confirming volatile organics in wells. State has not condemned contaminated wells. More extensive monitoring of total volatile organics is to be financed as a remedial action.

- Air Contamination Exposure - Potential for volatiles and DDD dust borne air contamination. NJDEP is embarking on further study of air contamination exposure posed by the site.

200024

Site Status

o GEMS Landfill is on porposed NPL.

o GEMS Landfill is a publically owned site, thus CERCLA requires at least a 50% cost share.

o An immediate removal action was approved February 8, 1983, for construction of a fence around Briar Lake and on one shore of Holly Run Creek to limit access to these areas, and for replacement of two small culverts with two of larger diameter to prevent flooding of Holly Run Creek.

o State Contract signed February 14, 1983.

o Unusually high ground water level on March 4 and 5, 1983, caused surface contamination of backyards, streets and driveways throughout the Fox Chase II neighborhood, which is adjacent to the landfill.

o RA approved additional immediate removal activities on March 5, 1983, to remove contaminated debris from the Fox Chase II residential area and to control the leachate from seeping back into this area.

Approved Action

(A) Security Fence - Property search, survey of fence line, buy and install fence around Briar Lake and one shore of Holly Run Creek
Cost: $155,000

(B) Replacement of two culverts
Cost: $15,000

Proposed Action

o Continue collecting and removing contaminated debris from Fox Chase II neighborhood as necessary
Cost: $15,000

o Design and construct a goundwater drain between landfill and residential area.
Cost: $35,000

Enforcement Actions

The State of New Jersey has taken a number of administrative actions at GEMS. In addition, the NJDEP in October 1981, instituted a suit in the Superior Court of New Jersey to compel GEMS to comply with operational and closure regulations. During the closure operation, there was evidence that contaminated fill was deposited at the site. This has led to complex litigation involving the Township of Gloucester, NJDEP, GEMS, Inc., individual shareholder of GEMS, Inc., and the City of Philadelphia, and others.

There has been no Federal enforcement activity to date. EPA is currently attempting to identify other responsible parties.

200025

State Actions

- The State will have to cost share at least 50% of the immediate removal action. Cost sharing specifics are documented through a Superfund State Contract. This contract will be amended to reflect the proposed actions and related State cost sharing responsibilities.

G5-41

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 7 1983

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Request to Initiate Immediate Removal at GEMS Landfill, Gloucester Township, New Jersey
ACTION MEMORANDUM

FROM: William N. Hedeman, Jr., Director Bill Hedeman
Office of Emergency and Remedial Response (WH-548)

TO: Michael A. Brown, Acting Assistant Administrator for Solid Waste and Emergency Response (WH-562-A)

Issue

Region II has requested authority to initiate an immediate removal at the GEMS Landfill site in Gloucester Township, New Jersey.

Background

The GEMS Landfill, owned by Gloucester Township, was leased to private operators for the disposal of waste between 1969 and 1980. Prior to 1974 chemical wastes were deposited there along with municipal refuse. The waste material was apparently dumped in deep pits dug below the water table. Materials deposited there include a host of volatile organic compounds such as toluene, xylene, ethylbenzene, chloroform, and benzene. Leachate leaving the site enters Holly Run, a nearby stream. Holly Run, in turn, has contaminated Briar Lake just downstream of the site.

Nature of Threat

Hazardous material, present in the landfill and migrating from the landfill, pose a threat to the nearby residential population. There are approximately 6,000 people living within one mile of GEMS and about 38,000 within three miles. Some of these residences are located less than 300 feet from the landfill.

The surrounding populace may be affected by several harmful exposure routes, including direct contact exposure to the landfill cover, leachate seeps, and contaminated surface waters, as well as explosive hazards on the landfill, and air contaminant exposure both on and off the site.

200027

Presently the public has free access to the landfill and the nearby contaminated area. The cover of the landfill is contaminated with 40 ppm DDD, a suspected human carcinogen. Explosion hazards exist at several points on and around the landfill. Readings taken on top of the landfill indicate 100 ppm total organic vapors emanating in pulses through cracks in the cover material. Leachate streams leaving the site contain high concentrations of organics (50 ppm), with some dilution as they flow downstream toward Briar Lake.

The immediate concern is that children reportedly play around Holly Run Creek and Briar Lake. Also, as Holly Run Creek enters Briar Lake two under size culverts cause the creek to back up thereby threatening to flood nearby residential basements with contaminated water.

Proposed Action

Region II has requested $170,000 for extramural costs and $30,000 for intramural costs to accomplish two tasks: (1) property search, survey of fence line, buy and install security fence around Briar Lake and one shore of Holly Run Creek, and (2) replacement of two existing culverts with two of a larger diameter to assist in drainage and reduce threat of flooding to nearby homes.

Discussion

Presently the GEMS Landfill poses a potential hazard to the nearby residential area through the acute threat of direct human exposure with the contaminated surface waters of Holly Run Creek and Briar Lake. Conditions at the site require that immediate action be taken to secure these areas and prevent immediate and significant risk of harm to human life or health. The scope of work proposed by Region II meets the criteria of section 300.65(a) of the NCP; therefore an immediate removal action is justifiable. A planned removal action is inappropriate because GEMS is a ranked site on the proposed National Superfund Priorities List.

Since GEMS was "publicly" owned at the time of waste disposal, the State will be required to enter into a Superfund State Contract to pay at least 50 percent of the costs of the recommended immediate removal action. Region II and the State will negotiate this contract.

Enforcement

The State of New Jersey has taken a number of administrative actions at GEMS. In addition, the New Jersey Department of Environmental Protection (NJDEP) in October 1981, instituted a suit in the Superior Court of New Jersey to compel GEMS to comply with operational and closure regulations. During the closure operation, there was evidence that contaminated fill was deposited at the site. This has led to complex litigation involving the Township of Gloucester, NJDEP, GEMS, Inc., individual shareholder of GEMS, Inc., the City of Philadelphia, and others.

There has been no Federal enforcement activity to date. EPA is currently attempting to identify other responsible parties.

Recommended Action

Based on the information submitted, I recommend that the Region's request for an immediate removal action at the GEMS Landfill for $170,000 in extramural costs and $30,000 in intramural costs be approved. You may show your concurrence/non-concurrence below:

Concur: _____ Date: 2/8/83

Nonconcur: _____ Date: _____

200029

JAN 2 7 1983

Region II

JAN 3 1 1983

Immediate Removal Action, GEMS Landfill, Gloucester Township, New Jersey

Barbara Metzger, Director
Environmental Services Division

Conrad Simon, Director
Water Management Division

Attached for your information is the Headquarters Action Memorandum denying the first request for an immediate removal action at the GEMS landfill.

Attachment

cc: Warren Llewellyn (with attachment), 2RC ✓

200030

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

DEC 28 1982

OFFICE OF
SOLID WASTE AND EMERGENCY RESPONSE

MEMORANDUM

SUBJECT: Request to Initiate Immediate Removal at GEMS Landfill, Gloucester Township, New Jersey

FROM: William N. Hedeman, Jr., Director
Office of Emergency and Remedial Response (WH-548)

TO: Rita M. Lavelle, Assistant Administrator
for Solid Waste and Emergency Response (WH-562-A)

Issue

Region II has requested authority to initiate an immediate removal at the GEMS Landfill site in Gloucester Township, New Jersey.

Background

The GEMS Landfill, owned by Gloucester Township, was leased to private operators for the disposal of waste between 1969 and 1980. Prior to 1974 chemical wastes were deposited there along with municipal refuse. The waste material was apparently dumped in deep pits dug below the water table. Materials deposited there include a host of volatile organic compounds such as toluene, xylene, ethylbenzene, chloroform, and benzene. Leachate leaving the site enters Holly Run, a nearby stream. Holly Run, in turn, has contaminated Briar Lake just downstream of the site.

Nature of Threat

Hazardous materials present in the landfill and migrating from the landfill pose a threat to the nearby residential population. There are approximately 6,000 people living within one mile of GEMS and about 38,000 within three miles. Some of these residences are located less than 300 feet from the landfill.

The surrounding populace may be affected by several harmful exposure routes, including direct contact exposure to the landfill cover, leachate seeps, and contaminated surface waters, as well as explosive hazards on the landfill, and air contaminant exposure both on and off the site.

200031

08

Presently the public has free access to the landfill and the nearby contaminated area. The cover of the landfill is contaminated with 40 ppm DDD, a suspected human carcinogen. Explosion hazards exist at several points on and around the landfill. Readings taken on top of the landfill indicate 100 ppm total organic vapors emanating in pulses through cracks in the cover material. Leachate streams leaving the site contain high concentrations of organics (50 ppm), with some dilution as they flow downstream toward Briar Lake.

Proposed Action

Region II has requested $440,500 to accomplish two tasks: (1) installation of approximately 11,500 feet of security fence around the landfill and the nearby area, and (2) replacement of two existing culverts with two of a larger diameter to assist in drainage and reduce the threat of flooding to nearby homes.

Discussion

Presently, the GEMS Landfill poses a potential hazard to the nearby residential area. Conditions at the site require that actions be taken to minimize possible exposure. According to the criteria prescribed in section 300.65(a) of the NCP, immediate removal actions shall be appropriate only when "exposure to acutely toxic substances" occurs. Since the entire scope of work does not meet the criteria in section 300.65(a), an immediate removal is not justified as currently proposed. A planned removal is inappropriate because GEMS is a ranked site on the Superfund Expanded Eligibility List.

Since GEMS is a ranked site, the Agency can enter into a contract or cooperative agreement with New Jersey to conduct remedial activities at the site in accordance with section 300.68 of the National Contingency Plan. In order to expedite such actions, the most urgent problems can be mitigated utilizing initial remedial measures (IRM).

Recommended Action

Based on the information submitted, I recommend that the Region's request for an immediate removal action at the GEMS Landfill as currently proposed be denied. However, there may be some areas of the site which pose an immediate and significant risk of harm to human life. If the Region, in conjunction with the State, determines that limited areas of the landfill meet the acute threat criteria in the NCP and forwards a request to the Emergency Response Division documenting such a determination, I will reconsider an immediate removal action.

Concurrently, it is recommended that the Region pursue a contract or cooperative agreement with the State through the Initial Remedial Measure (IRM) process to perform the requested activities as an expedited remedial action.

You may show your concurrence on the lines below.

Concur: Peter M. Kreiling Date: 1/5/83

Nonconcur: _____ Date: _____

200033

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

DATE: JAN 11 1983

JAN 17 1983

Fugitan

Diamond

file

SUBJECT: Request for Authorization to Expend Superfund Monies at the GEMS Landfill, Gloucester Township, New Jersey

FROM: Fred N. Rubel, Chief
Emergency Response & Hazardous Materials Inspection Branch

TO: Henry Van Cleave, Acting Director (WH-548)
Emergency Response Division

THRU: Barbara Metzger, Director
Environmental Services Division

Attached is a revised ten-point document requesting authorization to expend up to $170,000.00 to fence contaminated surface waters, and place two culverts causing back-up of contaminated water. The State of New Jersey will fund 50% of this immediate removal action. A State-EPA contract will be signed prior to commencement of expenditures. The revised request is based on agreement on the part of the state to scale down the project from its prior extent, as originally submitted. George Zachos, the OSC for this project, can be contacted for further information (FTS 340-6647). Your earliest action on this matter would be appreciated.

Attachment

cc: Dr. Marwan Sadat, NJDEP

bcc: W. Llewellyn, 2RC ✓
C. Simon, 2AWM
[redacted]
B. Metzger, 2ES
F. Rubel, 2ES-ERHMI
P. Elliot, 2ES-ERHMI
G. Zachos, 2ES-ERHMI

200034

EPA Form 1320-6 (Rev. 3-76)

200035

Additional Information

Relating to this Section

Can be Found in the

Confidential Files

REGION II

December 28, 1982

CEMS Landfill, Gloucester, New Jersey

Fred N. Rubel, Chief
Emergency Response & Hazardous Materials Inspection Branch

Henry Van Cleave, Acting Director
Emergency Response Division (WH-548)

Attached is a breakdown of projects/alternatives currently under consideration for immediate removal. This is supplementary to our formal fund authorization request (10-point document) submitted by telecopier on November 19, 1982.

Attachment

bcc: R. Ogg, 2AWM-HWS
F. Rubel, 2ES-ERHMI
G. Zachos, 2ES-ERHMI

200036

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: OCT 19 1982

SUBJECT: Request for Concurrence to Seek Authorization to Expend Superfund Monies at GEMS Landfill, Gloucester Township, New Jersey.

FROM: Barbara Metzger, Director
Environmental Services Division

TO: Jacqueline E. Schafer
Regional Administrator

THRU: Dick Dewling
Deputy Regional Administrator

Attached is a "Ten Point Document" and transmittal memo prepared for submission to Headquarters, which is designed to access Superfund for a removal action under the direction of EPA.

The situation in question poses an imminent and substantial risk to the public by way of contamination from the GEMS Landfill. State, local and EPA enforcement efforts have not produced the necessary action. We feel that if cleanup is not achieved shortly through enforcement, then Superfund monies should be requested via the attached material to be telefaxed to Headquarters. Your expeditious concurrence is sought.

Attachment

Concur: _____ 11/18/82
(signature/date)

Non-Concur: _____
(signature/date)

COMMENTS:

Per revised 10 point document 11/17/82
- Do not move ahead without contacting RA/DRA -

200037

EPA Form 1320-6 (Rev. 3-76)

200038-
200047

Additional Information

Relating to this Section

Can be Found in the

Confidential Files

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT
HAZARDOUS SITE MITIGATION ADMINISTRATION
CN 028, Trenton, N.J. 08625

MARWAN M. SADAT, P.E.
DIRECTOR

JORGE H. BERKOWITZ, PH.D.
ADMINISTRATOR

20 AUG 1985

Mr. William Librizzi, Director
Office of Emergency and Remedial Response
USEPA Region II
26 Federal Plaza
New York, New York 10278

RE: GEMS Gas Migration

Dear Mr. Librizzi:

This is to request that EPA consider taking an immediate removal action at GEMS Landfill site to prevent continued migration of gases through the soil toward residential areas adjacent to the Landfill.

I am enclosing a copy of the report by Malcolm Pirnie, our consultant, that assesses the magnitude of the gas migration problem and makes recommendations for remedial actions. We are in general agreement with the report recommendations, however, we prefer the alternative of an active gas extraction system using extraction wells and off gas treatment.

A copy of the report was previously transmitted to Mr. Fred Rubel of your staff for his information. We are currently proceeding with the installation of gas monitors in residential basements but feel that more permanent preventive measures are warranted.

Members of my staff are available to answer any questions you may have or discuss any aspects of this request.

Sincerely,

Dr. Jorge H. Berkowitz, Administrator
Hazardous Site Mitigation Administration

HS5:mk
cc: Fred Rubel
John Frisco

Enclosure

200048

United States
Environmental Protection
Agency

Region 2
26 Federal Plaza
New York, N.Y. 10278

New Jersey
New York
Puerto Rico
Virgin Islands

EPA Environmental Facts

August 19, 1985

GEMS LANDFILL
GLOUCESTER TOWNSHIP
Camden County, New Jersey

STATUS ADVISORY:

Evaluation of Remedial Alternatives

SITE DESCRIPTION:

The GEMS Landfill Site is located in Gloucester Township, Camden County, New Jersey, at the intersection of Blackwood-New Brooklyn and Turnersville-Hickstown Road and covers approximately 60 acres. The volume of the landfill is estimated to be 6 million cubic yards, and rises approximately 80 feet above the surrounding land.

Both industrial and municipal waste were disposed of in the landfill, and there are no records to determine what portion of the waste was hazardous. The landfill operated for about 20 years and was closed in 1980.

The area surrounding GEMS is rural and predominantly residential. However, some of the land adjacent to the site is used for industrial and recreational purposes. Several residential developments are situated less than a half mile from the landfill.

Municipal wells and private wells are the potable water sources for the citizens living near GEMS. An active municipal well is located approximately 4,500 feet east-southeast of the site.

The New Jersey Department of Environmental Protection (NJDEP) Solid Waste Administration (SWA) conducted regular inspections the GEMS Landfill beginning in April 1973. These inspections revealed numerous deficiencies in operations procedures and identified leachate emanating from the site and flowing into the local drainage systems. The United States Environmental Protection Agency (EPA) first identified the potential hazardous waste problems at the GEMS Landfill Site in November 1979. Various groups, including the NJDEP, the Camden County Department of Health (CCDOH), and the EPA Technical Assistance Team (TAT), conducted testing of local private wells, installed and tested monitoring wells, performed geophysical surveys, and sampled surface water, and leachate and air prior to this investigation. The NJDEP and EPA have determined that the contaminated groundwater and surface water may pose a potential health hazard to local residents. No potable water wells have been condemned by the State, but the State has recommended that the Township require residents to connect their homes to the public water supply service as a precaution against future migration of the plume. Also, development of new wells in the affected area has been discontinued.

Remedial actions to date consist of construction of a partial fence to restrict access to the landfill, and reconstruction of culverts in the Briar Lake development to prevent flooding.

The Remedial Investigation consisted of reviewing and utilizing data from previous studies: sampling surface water and sediment in local drainage: sampling leachate and air around the landfill: sampling residential wells: conducting geophysical investigations: and drilling, installing, and sampling monitoring wells.

SUMMARY OF REMEDIAL INVESTIGATION:

The results of the Remedial Investigation were as follows:

- The major exposure pathway is the ingestion of contaminated groundwater. The contamination has only migrated about 800 feet from the site within the Cohansey Aquifer. There would be a potential for acute, chronic, and carinogenic health risk if the contaminants were ingested at the observed concentrations in groundwater. Although the available data indicates that no residents are presently exposed to significant levels of contaminants in drinking water, residents may be exposed at some future time if the contaminants would migrate via groundwater to wells used for drinking purposes. Residents north of the site with water wells pumping

from the Cohansey Kirkwood Aquifer (or those that penetrate deeper aquifers which have leaky seals or casings) have the greatest risk of contamination.

- Holly Run is contaminated with several organic and inorganic chemicals. Acute and chronic ingestion, inhalation, or dermal hazards are associated with these chemicals.

- Ambient air sampling conducted in September 1983 indicates that volitile orgaics are present in the air at low levels.

- The detection of cumbustible gases in excess of the lower explosive limit in soil atmosphere samples suggest the potential for fire and/or explosion hazards. The release of landfill gases also effects the quality of the local environment.

FEASIBILITY STUDY:

A draft Remedial Investigation/Feasibility Study (RI/FS) which evaluated remedial alternatives was completed for the GEMS Landfill in July 1985. An evaluation of each alternative screened technical feasibility, compliance with institutional factors, environmental and public health impacts, and cost. Listed below is a summary of the remedial action alternatives.

REMEDIAL ACTION ALTERNATIVES

Alternative 1 - No Action

This alternative involves no remedial action; therefore, it maintains the site in its present condition.

Alternative 2 - No Action with Long Term Monitoring

This alternative is the same as Alternative 1, except that quarterly monitoring will be conducted to measure the levels of contamination in the soil, sediment, water, and air. Monitoring includes sampling, laboratory testing, and evaluating the data by a designated agency to monitor the risk to public health and the environment.

Alternative 3 - Cap (3:1 Slope, Partial Landfill Excavation)

- Cap (3:1 slopes, partial landfill excavation)
- Gas Collection and treatment
- Surface water diversion
- Leachate collection and landfill toe foundation
- Security fencing
- Holly Run and Briar Lake sediment excavation
- Erosion control measures

Alternative 4 - Multimedia Cap (3:1 Slope, Partial Landfill Excavation)

- Multimedia cap (3:1 slopes, partial landfill excavation)
- Gas collection and treatment
- Surface water diversion
- Leachate collection and landfill toe foundation system
- Security fencing
- Holly Run and Briar Lake sediment excavation
- Erosion control measures

Alternative 5 - Cap (3:1 Slope, No Excavation Required)

- Cap, 3:1 slope, (no excavation required)
- Gas collection and treatment
- Surface water division
- Leachate collection and landfill toe foundation system
- Security fencing
- Holly Run and Briar Lake sediment excavation
- Erosion control measures

Alternative 6 - Cap (Landfill Excavation Only on the Southern Slope)

- Cap (3:1 slope, excavation only on south slope)
- Gas collection and treatment
- Surface water diversion
- Leachate collection and landfill toe foundation system
- Security fencing
- Holly Run and Briar Lake sediment excavation
- Erosion control measures

Alternative 7 - Cap (Partial Landfill Excavation) and Groundwater Pumping and Treatment

This alternative contains the same remedial actions as previously described in Alternative 3 with the addition of a groundwater pumping and treatment system.

Selected alternate →

Alternative 8 - Multimedia Cap with Groundwater Pumping and Treatment

This alternative is the same as Alternative 4 with the addition of a groundwater pumping and treatment system.

Alternative 9 - Cap (No Excavation Required) with Groundwater Pumping and Treatment

This alternative contains the remedial actions presented in Alternative 5 with the addition of a groundwater pumping and treatment system.

Alternative 10 - Cap (Excavation Only on the Southern Slope) with Groundwater Pumping and Treatment

This alternative contains the remedial actions described in Alternative 6 with the addition of a groundwater pumping and treatment system.

Alternative 11 - Onsite RCRA Landfill with Groundwater Pumping and Treatment

The constuction of an onsite secure landfill to isolate the waste material, preventing further migration of the contaminants. This alternative will effectively isolate the waste material. Contaminated sediments will be excavated and placed in the onsite secure landfill with the existing waste. Contaminated groundwater will be pumped and treated to levels suitable for discharge.

Alternative 12 - Offsite Disposal in a Approved RCRA Landfill

This alternative involves the total excavation and off-site disposal of six million cubic yards of mixed industrial and municipal waste.

ESTIMATED CAPITAL AND O & M COSTS:

Remedial Actions Alternatives	Capital (1,000)	Annual O&M ($1,000) Includes Monitoring and Post-Closure Maintenance (1-30 Years)
1 No Action	$ 0	0
2 No Action with Monitoring	0	53
3 Cap with Partial Landfill Excavation	11,200	107
4 Multimedia Cap with Partial Landfill Excavation	22,600	107
5 Cap with no Landfill Excavation	23,000	107
6 Cap with Landfill Excavation Only on the Southern Slope	18,800	107
7 Cap with Partial Landfill Excavation and Groundwater Pumping and Treatment	12,500	601
8 Multimedia Cap with Partial Excavation and Groundwater Pumping and Treatment	26,500 2ft CLAY SIDES 23,900	601

300005

9	Cap without Landfill Excavation with Groundwater Pumping and Treatment	24,200	601
10	Cap with Landfill Excavation on the South Slope with Groundwater Pumping and Treatment	20,100	601
11	Onsite RCRA Landfill with Groundwater Treatment	162,900	606
12	Offsite Disposal with Groundwater Treatment	1,500,000	--

Note: Capital Costs presented are rounded to the nearest $100,000 for comparison purposes.

RECOMMENDED ALTERNATIVE

The U.S. EPA in conjunction with the NJDEP are tentatively recommending Alternative No. 8 be implemented at the GEMS Landfill Site.

PUBLIC COMMENTS:

Written comments will be accepted throughout the three week public comment period which ends on August 23, 1985. All comments regarding the evaluation of remedial alternatives will be considered in determining our final selection of a remedial alternative for the GEMS Landfill. Comments should be forwarded to:

Mr. Edward Putnam, Project Manager
New Jersey Remedial Action Branch
U.S. Environmental Protection Agency
26 Federal Plaza, Room 711
New York, N.Y. 10278

FOR FURTHER INFORMATION:

For further information concerning the proposed CERCLA action at the GEMS Landfill contact either Lillian Johnson of EPA's Office of External Programs (212) 264-2515 or Ed Putnam at (212) 264-1873.

WESTON • SPER
Building 10, GSA Depot
Woodbridge Avenue, Edison, NJ 08837 • (201) 549-6225

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE REMOVAL AND PREVENTION
EPA CONTRACT 68-01-6669

MEMORANDUM

TO: George Zachos
Emergency Response and Hazardous Materials Inspection Branch, U.S. EPA

FROM: Edward W. Blanar, TAT II

SUBJECT: Meeting Summary, Gloucester Township Town Hall, February 15, 1983.

DATE: March 14, 1983

On February 15, 1983, at 1030 hr. a meeting was held at Gloucester Township Town Hall, Gloucester Township, Camden County, New Jersey to discuss the proposed fence/culvert construction at Briar Lake and Fox Chase II. The following is a list of persons attending the meeting.

Name	Affiliation
Fred N. Rubel	U.S. EPA Region II
George Zachos	U.S. EPA Region II
Robert Cobiella	U.S. EPA Region II
Edward Blanar	TAT II
Marwan Sadat	NJDEP, HSMA
Jorge Berkowitz	NJDEP, HSMA
Joe Buttich	NJDEP, HSMA
David Henderson	NJDEP, HSMA
Tony Farro	NJDEP, HSMA
Grace Singer	NJDEP, HSMA
Mayor Ann Mullen	Gloucester Township
Carol Denis	Gloucester Township
Aaron Alexander	Gloucester Township
Robert Paschon	Gloucester Township, Attorney
Jack Sworaski	Camden County, SWA
Herb Rambo	Camden County, SWA
Charles Riebel	Key Engineering
John Balsam	Key Engineering
Debbie Dorey	State Senator Dalton's Office

Mr. Marwan Sadat opened the meeting with a brief introduction of the States role at G.E.M.S. and how they requested assistance from U.S. EPA. He then turned the discussion over to Fred Rubel, who explained that his section, Emergency Response, had a limited role in the G.E.M.S. Landfill situation and explained that a request for fence/culvert construction to prevent direct contact of surface waters to residents around Briar Lake and Fox Chase II had been approved by Washington.

300007

Mr. Rubel also stated that "Notice Letters" to responsible parties had been sent out. He then turned the discussion over to George Zachos.

Mr. Zachos explained that a two-phase approach had been developed to help reduce the threat of contaminated surface water to residents near Briar Lake and Fox Chase II. Before going into detail, Mr. Zachos explained that this was a band-aid approach due to lack of adequate funding; that only $170,000 had been appropriated. Mr. Zachos explained that the first phase was to remove the two existing culverts and either replace them with two new longer culverts or place one large culvert there and cover it with soil, by Briar Lane. The second phase would be to fence sections of Holly Run behind Fox Chase II, Briar Lake and sections of Holly Run Creek near Briar Lane. Mr. Zachos explained that these proposals were open to discussion an not final.

Mayor Mullen then asked about the location of the fence line at Fox Chase II. Mr. Marwan Sadat stated that it would be by the present fence line. Mayor Mullen stated that the field by Fox Chase II would be eliminated from use by the children and could the fence be moved back closer to Holly Run. Mr. Zachos explained that the stream had been moved once and that the fill on the field was from the landfill which may be contaminated and thus pose a health threat to children playing in the area. Mayor Mullen then stated that she had witnessed the time when the fill was placed on the field by the landfill operation and was powerless to stop them. She stated the operation exposed garbage and debris from the landfill itself. She then stated that she understood the reason for the location of the fence line.

Mr. Robert Paschon asked how long the contract process had been going on and if the Township could get a list of sources on who are receiving the "Notice Letters". He also asked if the Township could receive split samples when either the NJDEP or U.S. EPA did any sampling. Furthermore, he asked if the State, in their previous sampling, had followed a quality control plan.

Mr. Jorge Berkowitz replied that if the Township wished to receive samples that the Township would be required to follow a QA/QC plan which would be acceptable to the State. Mr. Joe Buttich then explained that all samples collected, by the NJDEP at G.E.M.S., followed a QA/QC procedure. Both Mr. Sadat and Mr. Rubel agreed to the split samples. Mr. Rubel also stated that he would look into obtaining the list. Mr. Sadat stated that the contract process had been going on for a few months and that the NJDEP annd U.S. EPA would share the costs. Furthermore, according to Mr. Sadat, the States' share could be as high as 65%.

Mr. Paschon also asked how the easements would be obtained. Mr. Sadat stated by lot and lot number and that "Green Acre" would obtain the easement.

Mr. Zachos then discussed the approximate dates of activities for the fence/culvert construction. Mr. Rubel informed them of the use of flyers to inform the public.

Mr. Aaron Alexander asked why the NJDEP could not extend the water lines. He asked, "why spend the money on fencing and not on extending the water lines?" Mr. Sadat stated that he was frustrated with the slow movement and that there is support for immediate removal actions such as fencing the area where there is definite contamination.

Mr. Berkowitz stated that the compelling argument is whether the wells are contaminated or not. He stated that the NJDEP policy is 50 ppb of one compound or 100 ppb total volatile organic compounds. The information, so far, has not shown levels greater than the levels required.

Ms. Debbie Dorey stated that to extend the water lines would require litigation in court. That there is presently legislation in court related to public utilities. She stated that in order for the Garden State Water Company to extend the water lines they would need a low interest loan or some other alternative method (Farmers Home Administration, etc.). This complicates the water line extensionn problem.

Mayor Mullen then requested that the Township receive first-hand information on press conferences, etc. She stated that she was notified after the fact by State Senator Dalton's Office. She stated the NJDEP Assistant Commissioner George Tyler's Office denied the meeting would be taking place.

Mr. Rubel stated that the Office of Public and Congressional Affairs would notify the Township in the future. Mr. Sadat stated that Jerry Burke, Attorney for NJDEP, had organized this meeting and sent the invitations.

Mayor Mullen further stated she felt the attitude of the public towards the fence would be "window dressing". She requested that they be allowed to include in the flyer that all parties are working together in this venture and if the area of information could be extended to the Deer Park/Fox Chase Developments. She also stated the FHA would not insure home mortgages around the G.E.M.S. Landfill. She wondered whether the NJDEP could assist in removing the red-line area.

The NJDEP stated that it was beyond their groups jurisdiction to remove the red-line area.

Mr. Alexander asked how the protective clothing issue would be explained to the public. Both U.S. EPA and NJDEP stated that on-site representatives would be present to answer any questions to the public.

Mr. Sadat stated that a feasibility study would be the next step and initial remedial action by EPA would hopefully follow. Finally, Mr. Rubel stated that his group, Emergency Response, would be finished after these projects and that Mr. Sadat's group and a remedial U.S. EPA group would continue and take over.

The meeting ended at 1145 hr. with everyone in general agreement with the action to be taken. All parties seemed to be in a cooperative mood and pledged a cooperative attitude.

EWB:ls

ENVIRONMENTAL AGENCY

N BATORY
Jr

G-18-0016
Camden County

Administration Building
600 Market Street
Camden, New Jersey 08101
(609) 757-8979

June 30, 1982

MEMO TO: Joan Batory, Director

FROM: Leon Robinson, Environmental Planner

RE: Public Meeting GEMS Landfill 6/29/82
- NJDEP
- N.J. Dept. of Health

Attendees:

NJDEP STAFF

Ass't. Commissioner Tyler
Director Water Resources A. Schiffmann
Air Quality, Dr. Patel
Ass't. Chief, Enforcement, Lance Miller
Chief, Enforcement, Keith Onsdorff
Attorney, Jerry Burke

NJ DEPT. HEALTH

Ass't. Commissioner Altman
Dr. Rosemann

ELECTED OFFICIALS

Senator Dan Dalton
Assemblyman Dennis Reilly
Mayor Ann Mullen

Senator Dalton opened the meeting by commenting that he had requested a study be done by NJDEP and NJ Dept. of Health on GEMS landfill in the fall of 1981.

These "studies" resulted in "A Health Survey of the Population Living Near the Gloucester Environmental Management Services Landfill conducted by the Environmental Health Hazards Evaluation Program, NJ Dept. of Health in cooperation with the Camden County Health Dept., April 1982", and "Summary of Surface and Ground Water Monitoring in the Vicinity of the GEMS Landfill, Gloucester Township, Camden County, June 1982", NJDEP.

Ass't. Commissioner Tyler made opening comments to the effect that GEMS Landfill was just one of 20 statewide and was not a real problem. He then turned it over to Dr. Rosemann of the Dept. of Health.

Dr. Rosemann reviewed the Health Survey. 354 people were interviewed around the landfill and 163 in another area in Camden County (control group). He indicated that no significant differences were found in health. The only difference they saw were in complaints about odors and that more male non-smokers living near the landfill had more more respiratory complaints. They do not know why this is so. They plan breathing tests for those with symptoms.

Dr. Patel of DEP indicated that air samples were taken in 26 homes in the last of December and in January and 14 samples on the top of landfill. He admitted the winter months samples during the day may give better results. Samples showed nothing above 10 ppb. Samples in the summer are planned.

Lance Miller, DEP Enforcement, then presented the surface and groundwater study. He reviewed the basic geology. He indicated that DEP does not know the rate of groundwater flow nor the direction. A review of well analyses was given. It was stated that when total volatile organics reaches 100 ppb, wells are closed. A total of 890 ppb for a private well was found but was considered "a statistical anomaly." No plans are forthcoming to investigate why this occurred. It was constantly reiterated that "no wells have been closed". A redlined area was announced that enclosed an area surrounding the landfill where DEP has banned any new well permits since June 18, 1982.

Surface water shows the greatest contamination with as much as 10,000 ppb in one instance. This location is Briar Lake, downstream of the landfill on Holly Run Stream. Briar Lake has become a collection point for massive amounts of leachate and surface runoff.

After the formal presentation, the meeting was opened to questions and answers. Several people indicated that they could not afford to hook-up to public water supply. One gentlemen indicated that it would cost him $2,600. At this point, Director Schiffman of DEP lectured the audience on the economics of their problem. He indicated that they should connect their water supplies to Garden State Water Company.

Several members of the audience indicated that they know better than he the economics of their situation.

Several questions and answers by the audience gave the following results It was learned that after knowing the contamination of Briar Lake, no health survey was done of any of the residents around the lake. It was advised that no bodily contact with Holly Run or Briar Lake should occur A better fence is planned for construction for about September. This fence would surround the landfill and Briar Lake. It would take about 4 years to put a cap over the landfill.

Ass't. Commissioner Tyler made a committment to the audience to speed up the process and to send results or any new information to Senator Dalton's office. He also indicated new funds are available from recent legislation for cases like GEMS.

SUMMARY

All members of the audience were appalled at both the attitudes of state officials and lack of information and plans to do anything to rectify the problems. At one point, a question was raised regarding DDD and the state's response was "Who knows?" With every question from the audience and every poor or inadequate state response, more and more people began to leave the meeting.

Several people in the audience could not understand how the state could present inconclusive and poor data and at the same time recommend not using domestic wells and requiring tying into public water supply. The general sentiment was that the state was presenting facts and reporting again several things already known with little action. Several felt the meeting was planned to appease the public. In fact, it achieved just the opposite.

RECOMMENDATIONS

The underlying stance of DEP seemed apparent. The department has decided in the past to pursue payment for closure and cleanup through its pending legislation. This posture seemed to waiver when Ass't. Commission Tyler indicated a possibility of using Hazardous Discharge Funds from the new legislation for cleanup.

The only conceivable procedure that could put leverage on DEP is for a group of South Jersey elected officials lobby Commissioner Huey and the Governor. Local pressure on state government officials seems less likely to free-up funds necessary to abate the problem.

LR:co
xc: Solid Waste Dept. attn Susan Senatore
Howard Emerson, Health Dept.
CCEA Board Members

The Gloucester County Times, Woodbury, N.J., Sunday, July 25, 1982

Kramer, GEMS landfills added to Superfund cleanup site list

Times Photo by Bob Worrell

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Mantua Township group that the
ster Environmental Management
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MANTUA TWP. — The Helen S. Kramer Landfill here and the Gloucester Environmental Management Services (GEMS) Landfill in Gloucester Township have been added to a list of toxic waste disposal sites that may qualify for cleanup with federal Superfund money.

The two landfills, which closed last year, were added to the nationwide list primarily because of water pollution they are causing, said U.S. Environmental Protection Agency Regional Administrator Jacqueline E. Schafer on Friday. The EPA administers the $1.6 billion Superfund cleanup program.

Three other New Jersey sites, including a small waste oil disposal site in Pennsauken, were also among 45 sites that were added to the national list. Formal announcement of the additions was made in Washington by EPA Administrator Anne M. Gorsuch.

"That brings New Jersey to number one right now on the number of (Superfund-designated) sites. It's a dubious distinction," said Miss Schafer.

She was in Mantua Township to speak about cleanup plans for one of the 115 hazardous waste sites previously targeted for Superfund help — the Lipari Landfill here.

Ms. Schafer noted the newly listed sites may have to wait in line behind those in the initial group for Superfund money. She said both the Kramer and GEMS dump sites will require further study of the degree of water pollution they are causing and possible cleanup options before funding will be approved.

The Kramer Landfill, located on Jessup Mill Road, "received industrial waste and is believed to be contaminating ground and surface water," Miss Schaffer said.

State environmental officials have said runoff from the 60-acre landfill has polluted the Edwards Run Branch of Mantua Creek. They waged a long court battle before being permitted to close the site in March 1981.

Three underground fires broke out at the landfill after it closed, including one which burned for six weeks last summer and required more than $300,000 in state funds to extinguish.

County and state environmental officials have warned the landfill still must be covered properly to prevent future fires.

At the GEMS Landfill, located at Hickstown and Erial Roads in Gloucester Township, a recent state Department of Environmental Protection study showed chemical pollution in several nearby private water wells. DEP officials have ordered a ban on drilling new wells in the vicinity and urged homeowners with existing wells to hook into municipal water lines.

Pollution has also infiltrated nearby Holly Run and Briar Lake which has turned the water a "bright orange" hue, according to Jack Sworaski, environmental specialist with the Camden County Division of Solid Waste Management.

Another site added to the Superfund list is the Swope Oil Co. on National Highway, Pennsauken. Camden County environmental officials said the one-acre site was used for paint recycling and undetermined chemicals were stored in drums and lagoon pits there. The chemicals have contaminated soil and may pose an air pollution threat, they said.

The other newly added New Jersey sites are the Krysowaty Farm in Hillsborough Township, Somerset County, which holds about 500 drums of chemicals in a ravine, and Syncon Resins in South Kearny, Hudson County, a former a resin and varnish plant that closed and left behind and tanks of chemicals and unlined lagoons with waste water.

Richard Cahill, a spokesman for EPA Region II office in New Y said cooperative agreements wo worked out with the DEP over how to proceed at each new site.

"That should be worked out over t next couple of months," he said.

He said the five New Jersey sites selected were all nominated by the DEP.

The original list, which includes both Lipari and Bridgeport Rental and Oil Services in Logan Township, was compiled last fall.

The Garden State now has 17 sites on the list, the most in the nation.

Despite criticism by Democrat the pace of implementation of the Superfund program, Mrs. Gorsuch said that $147 million has been allocated or promised nationwide for cleanups.

And aides to Rep. Millicent Fen a Bernardsville Republican ru for the U.S. Senate, said they had told about $15.8 million had obligated for cleanup at six original dozen New Jersey site that contracts for cleanup of the were expected to be signed soon

G-18-0027

Suit filed against dumpers

By RENEE WINKLER
Of the Courier-Post

CAMDEN — The City of Philadelphia and two firms responsible for hauling 1,600 truckloads of toxic waste to the Gloucester Township landfill have been named as defendants in a lawsuit aimed at removing the substance.

The material, reportedly with high levels of DDD, a cancer-causing substance that is a breakdown product of the insecticide DDT, was trucked to the landfill by Geppert Brothers Inc. of Colmar, Pa.

One of the operators of the landfill, Anthony Amadei, testified during hearings in the case last spring that he had hired Curtis T. Bedwell & Sons Inc., a West Chester, Pa., engineering firm, to procure topsoil to be used as cover material to close the landfill.

The 60-acre landfill had been ordered closed because it exceeded height levels in its state operating permit.

According to documents filed with the court, Bedwell also had a contract with the City of Philadelphia to empty several abandoned silos at a Northeast Philadelphia sewage treatment plant containing mulch-like material.

Bedwell hired Geppert to truck the material to the landfill on Hickstown Road.

The hauling continued until Dec. 29, when Gloucester Township police reported that a Geppert truck had spilled an oily substance on the roadway. Tests by the state Department of Environmental Protection showed that it was a toxic substance barred by state regulations.

DEP officials traced the material to the abandoned sewerage plant and sought a court order requiring the owners of the dump, Gloucester Environmental Management Services Inc., to remove it.

Hearings on the request were scheduled several times throughout the past 10 months, but attorneys have been unable to agree on a method of removal.

Gloucester Township officials and the DEP attempted for several months to reach an agreement with Philadelphia and the two firms to remove the material. When the negotiations broke down, township solicitor D. Vincent Lazzaro filed a request with Deighan to name them as defendants.

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G-18-0014

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GEORGE J. TYLER, ASSISTANT COMMISSIONER
CN 402
TRENTON, N.J. 08625
609-292-8058

June 18, 1982

The Honorable Carl Kerbowski
Mayor of Pine Hill Borough
48 West 6th Avenue
Pine Hill, New Jersey 08021

Dear Mayor Kerbowski:

The Department of Environmental Protection has determined that the Gloucester Environmental Management Services, Inc. (GEMS) Landfill, which is located at the intersection of Erial and Hickstown Roads in Gloucester Township, is the cause of surface and ground water contamination which is spreading laterally in southerly, easterly and westerly directions from the landfill, as well as migrating vertically into the deeper water bearing zones. Organic chemicals have been detected in monitoring wells, private wells and surface waters in the vicinity of the landfill. The degree and extent of ground water contamination, however, have not yet been fully determined. Although organic chemicals have been found in some private drinking wells, the levels have not justified the closure of any wells.

In order to avoid the possibility of new wells being installed in an area where contaminants may be present, the Department has recommended to Gloucester Township that it not allow any new development, which is dependent upon on-site wells, within the following area: Beginning at the intersection of Jarvis Road and Prospect Avenue and proceeding to the intersection of Jarvis Road and Hickstown Road, then to the intersection of Hickstown Road and Little Mill Road, then to the intersection of Little Mill Road and College Drive, then to the intersection of College Drive and Peter Cheeseman Lane, then to the intersection of Peter Cheeseman Lane and Garwood Road, and then an imaginary line from the intersection of Peter Cheeseman Lane and Garwood Road to the intersection of Jarvis Road and Prospect Avenue. (Please see the attached map.) The majority of this area is in Gloucester Township, although a small portion along Little Mill Road is in the Borough of Pine Hill. Therefore, the

Department recommends that the Borough of Pine Hill not allow any new development, which is dependent upon on-site wells, in that part of the area outlined above which is in Pine Hill. The implementation of this recommendation will also prevent the introduction of additional complicating factors in determining the extent and degree of ground water contamination since the installation of several private wells can influence the rate and direction of ground water flow. In addition to making this recommendation to Gloucester Township and the Borough of Pine Hill, the Department will not issue any permits for well drilling in this area.

This recommendation is based on the information that is currently available to the Department. The Department reserves the right to modify its recommendation as additional data become available.

If you have any questions regarding our recommendation, we are available to meet with Borough officials at your convenience.

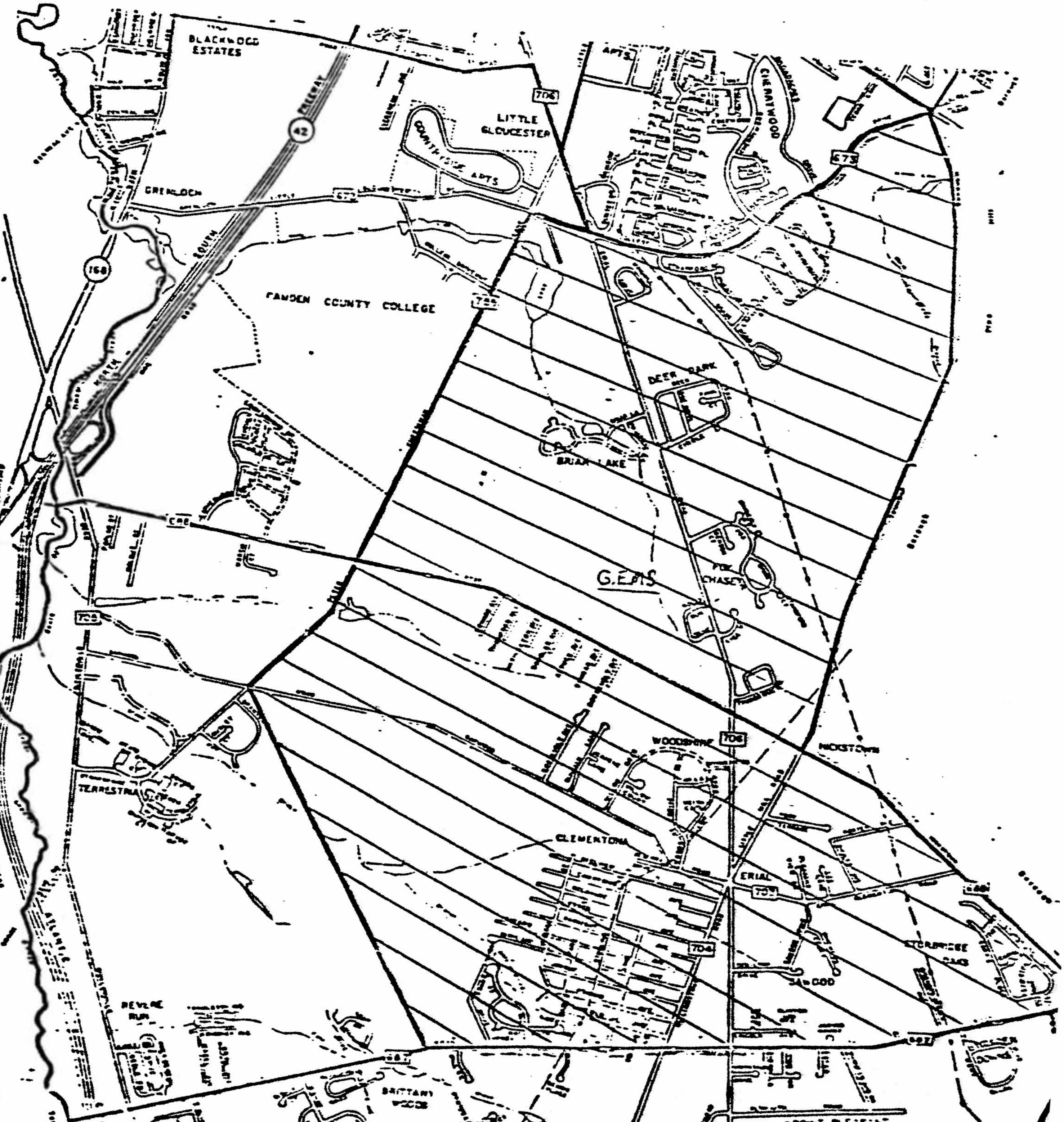
Very truly yours,

Gerard Burke
Office of Enforcement

GB:jc
Attachment

cc: Mr. Herb Rambo, Administrator
Camden County Department of Solid Waste

~~Dr. Bernard Sebastian~~
Camden County Health Department


BLACKWOOD ESTATES
LITTLE GLOUCESTER
COUNTRYSIDE APTS
APTS
CHERRYWOOD
GRENLOCH
42
168
706
673
705
704
CAMDEN COUNTY COLLEGE
DEER PARK
BRIAR LAKE
FOX CHASE
WOODSHIRE
HICKSTOWN
TERRESTRIA
CLEMENTON
ERIAL
STONEBRIDGE OAKS
REVERE RUN
BRITTANY WOODS
POINT PLEASANT

300017

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GEORGE J. TYLER, ASSISTANT COMMISSIONER
CN 402
TRENTON, N.J. 08625
609-292-8058

June 18, 1982

The Honorable Connie Roggio, Mayor
Township of Gloucester
P.O. Box 8
Blackwood, New Jersey 08012

Dear Mayor Roggio:

The Department of Environmental Protection has determined that the Gloucester Environmental Management Services, Inc. (GEMS) Landfill, which is located at the intersection of Erial And Hickstown Roads in Gloucester Township, is the cause of surface and ground water contamination which is spreading laterally in southerly, easterly and westerly directions from the landfill, as well as migrating vertically into the deeper water bearing zones. Organic chemicals have been detected in monitoring wells, private wells and surface waters in the vicinity of the landfill. The degree and extent of ground water contamination, however, have not yet been fully determined. Although organic chemicals have been found in some private drinking wells, the levels have not justified the closure of any wells.

In order to avoid the possibility of new wells being installed in an area where contaminants may be present, the Department recommends that Gloucester Township not allow any new development, which is dependent upon on-site wells within the following area: Beginning at the intersection of Jarvis Road and Prospect Avenue and proceeding to the intersection of Jarvis Road and Hickstown Road, then to the intersection of Hickstown Road and Little Mill Road, then to the intersection of Little Mill Road and College Drive, then to the intersection of College Drive and Peter Cheeseman Lane, then to the intersection of Peter Cheeseman Lane and Garwood Road, and then an imaginary line from the intersection of Peter Cheeseman Lane and Garwood Road to the intersection of Jarvis Road and Prospect Avenue. (Please see the attached map.) The implementation of this recommendation will also prevent the introduction of additional complicating factors in determining the extent and degree of ground water contamination since

the installation of several private wells can influence the rate and direction of ground water flow. In addition to making this recommendation to the Township, the Department will not issue any permits for well drilling in this area.

The Department also recommends that residences and businesses in the area outlined above, which currently utilize private wells for potable purposes and which are in close proximity to the Garden State Water Company's supply lines, connect to the public water supply in order to eliminate the possibility of using water from a well which may become contaminated at some future date.

The Department further recommends that the Township begin discussions with the Garden State Water Company regarding the extension of water mains to supply those residences and businesses in the area outlined above which are currently utilizing private wells for potable purposes and which are not in close proximity to existing water mains. The Department would be happy to meet with officials from the Township and Garden State Water Company regarding this recommendation.

Finally, the Department recommends that the Township post signs around Briar Lake indicating that the water is contaminated and that contact should be avoided.

These recommendations are based on the information that is currently available to the Department. The Department reserves the right to modify its recommendations as additional data become available.

If you have any questions concerning our recommendations, we are available to meet with Township officials at your convenience.

Very truly yours,

Gerard Burke

Gerard Burke
Office of Enforcement

GB:jc
Attachment

cc: Mr. Herb Rambo, Administrator
Camden County Department of Solid Waste

~~Mr. Bernard Sebastian~~
Camden County Health Department

Robert Paschon, Esq.
Paschon, Feurey & Kotzas

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
GEORGE J. TYLER, ASSISTANT COMMISSIONER
CN 402
TRENTON, N.J. 08625
609-292-8058

June 18, 1982

Mr. Charles Decker, Chief
Bureau of Construction Code Enforcement
Department of Community Affairs
620 West State Street
Trenton, New Jersey 08625

Re: Gloucester Township,
Camden County, New Jersey

Dear Mr. Decker:

I understand that the Department of Community Affairs has assumed the responsibility for local code enforcement, including the issuance of building permits in Gloucester Township, Camden County, New Jersey.

The Department of Environmental Protection (DEP) has determined that the Gloucester Environmental Management Services, Inc. (GEMS) Landfill, which is located at the intersection of Erial and Hickstown Roads in Gloucester Township, is the cause of surface and ground water contamination which is spreading laterally in southerly, easterly and westerly directions from the landfill, as well as migrating vertically into the deeper water bearing zones. Organic chemicals have been detected in monitoring wells, private wells and surface waters in the vicinity of the landfill. The degree and extent of ground water contamination, however, have not yet been fully determined. Although organic chemicals have been found in some private drinking wells, the levels have not justified the closure of any wells.

In order to avoid the possibility of new wells being installed in an area where contaminants may be present, the DEP recommends that the Department of Community Affairs not allow any new development, which is dependent upon on-site wells, within the following area of Gloucester Township: Beginning at the intersection of Jarvis Road and Prospect Avenue and proceeding to the intersection of Jarvis Road and Hickstown Road, then to the intersection of Hickstown Road

and Little Mill Road, then to the intersection of Little Mill Road and College Drive, then to the intersection of College Drive and Peter Cheeseman Lane, then to the intersection of Peter Cheeseman Lane and Garwood Road, and then an imaginary line from the intersection of Peter Cheeseman Lane and Garwood Road to the intersection of Jarvis Road and Prospect Avenue. (Please see the attached map.) The implementation of this recommendation will also prevent the introduction of additional complicating factors in determining the extent and degree of ground water contamination since the installation of several private wells can influence the rate and direction of ground water flow. The DEP has made the same recommendation to Gloucester Township. In addition to making this recommendation, the DEP will not issue any permits for well drilling in this area.

This recommendation is based on the information that is currently available to the DEP. The Department reserves the right to modify its recommendation as additional data become available.

If you have any questions concerning our recommendation, we are available to meet with you at your convenience.

Very truly yours,

Gerard Burke

Gerard Burke
Office of Enforcement

GB:jc
Attachment

cc: The Honorable Connie Roggio
Mayor of Gloucester Township

Mr. Herb Rambo, Administrator
Camden County Department of Solid Waste

[redacted]
Camden County Health Department

Robert Paschon, Esq.
Paschon, Feurey & Kotzas

TOWNSHIP OF GLOUCESTER

Chews Landing-Clementon Rd., at Hider Lane
P.O. Box 8, Blackwood, New Jersey 08012
(609) 228-4000

September 30, 1983

Dear Resident:

Representatives of the U.S. Environmental Protection Agency are visiting you today to discuss a project they are about to begin.

The project involves drilling a few monitoring wells behind Fox Chase II. The groundwater will be tested to see if it is contaminated and also to learn in which direction the groundwater is flowing. The main objective of both the EPA and Gloucester Township is to determine whether there is any hazard to the residents.

The testing that will be done is quite involved. We do not expect to have a report on the test results until mid-December. Of course, if the tests reveal any danger to you, you will be notified as soon as possible.

If you have any questions, please feel free to call my office.

Very truly yours,

Carole A. Dennis
Director of Community Services

CAD/rpk

300022

OVERVIEW OF FOX CHASE II HYDROGEOLOGIC INVESTIGATION

On March 5, 1983, the New Jersey Department Of Environmental Protection (NJDEP) requested the assistance of the United States Environmental Protection Agency (USEPA) to assess potential hazards to the residents of Fox Chase II from floodwaters consisting of leachate and runoff.

The USEPA and NJDEP have recently completed joint immediate removals at the Fox Chase II development and Briar Lake area. As an initial mitigation measure, a sand berm covered with plastic was placed on the road behind the Fox Chase II houses. In a related action, more than 3,000 feet of chain-link fence was erected, and an under-sized culvert near the inlet to Briar Lake was replaced with dual corrugated steel culverts. The purpose of these actions was to remove the potential for residents in the area to come into direct contact with contaminated surface water.

In response to the problem caused by the surfacing of leachate behind Fox Chase II, the USEPA proposes to conduct a hydrogeologic investigation to assess the immediacy of the problem and the feasibility of additional mitigative measures.

The hydrogeologic investigation at Fox Chase II will include the installation of six (6) pairs of monitoring wells and one (1) pumping well. Samples of groundwater will be collected from each well and analyzed for priority pollutant concentrations.

Following the receipt and evaluation of the laboratory analytical results, a pumping test will be conducted. The pumping test data shall be used to calculate the rate and volume of groundwater flow beneath Fox Chase II. Ultimately, the feasibility of lowering the water table during the normally wet winter months will be assessed so that leachate breakout adjacent to the houses does not recur.

Previous investigations by NJDEP and Camden County have focused primarily on the water table aquifer South and West of the landfill. The location of existing monitoring wells is provided in Figure 1, which shows no wells have been drilled near Fox Chase II. Groundwater conditions East and North of the landfill have not been addressed in previous investigations. The proposed Fox Chase II investigation does not duplicate earlier State or County investigations, nor the work plan proposed by NUS Corp.

The location of the proposed monitoring wells is provided in Figure 2. The wells shall be drilled a maximum depth of ninety (90) feet to the base of the surficial aquifer. All wells will be secured with locking caps to insure against unauthorized access.

The project schedule is provided in the following table:

	October				November				December	
	Week 1	2	3	4	Week 1	2	3	4	Week 1	2
Install Wells	X	X								
Sample Wells			X							
Receive Lab Results						X				
Conduct Pumping Test							X			
Submit Report										X

300023

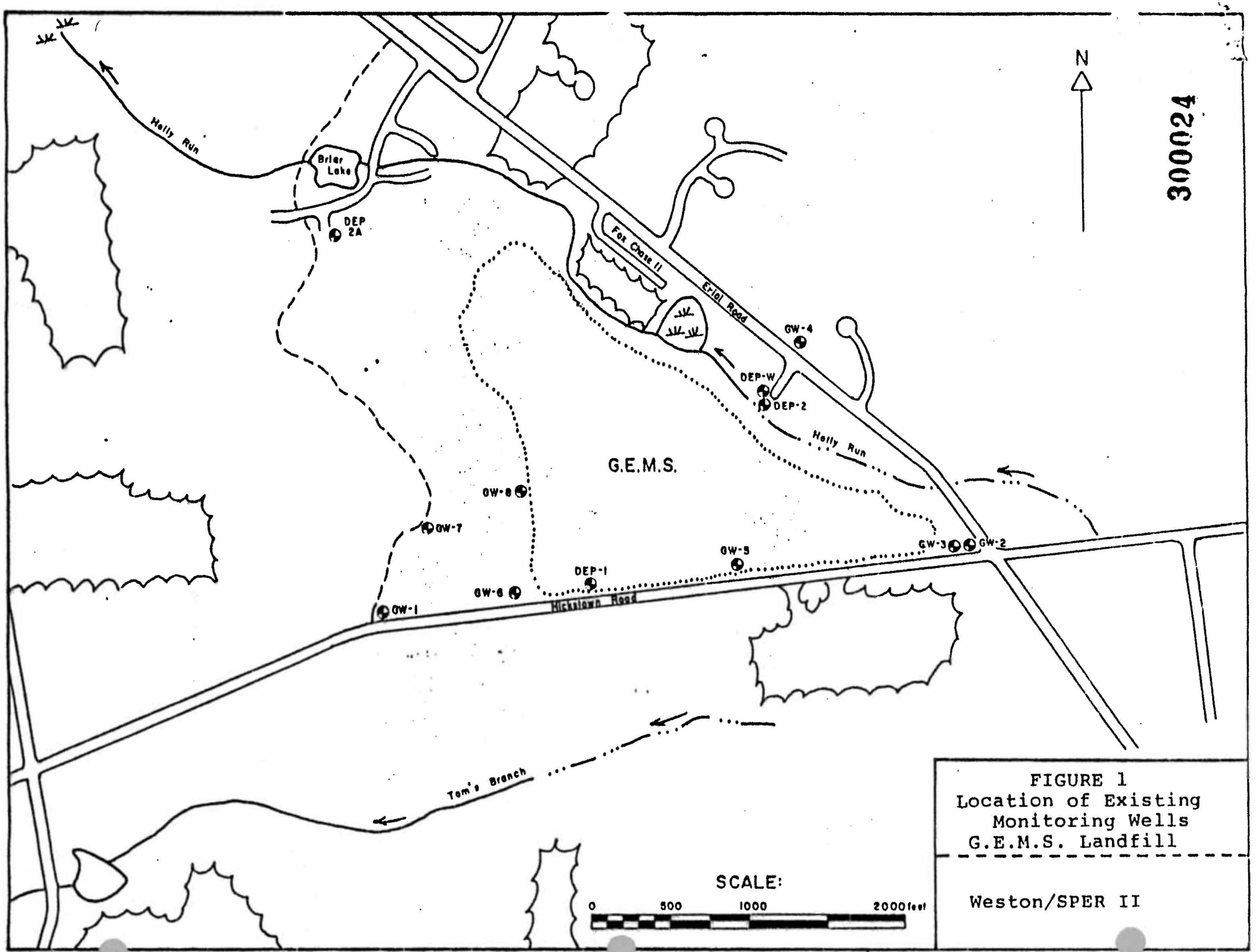


FIGURE 1
Location of Existing
Monitoring Wells
G.E.M.S. Landfill

Weston/SPER II

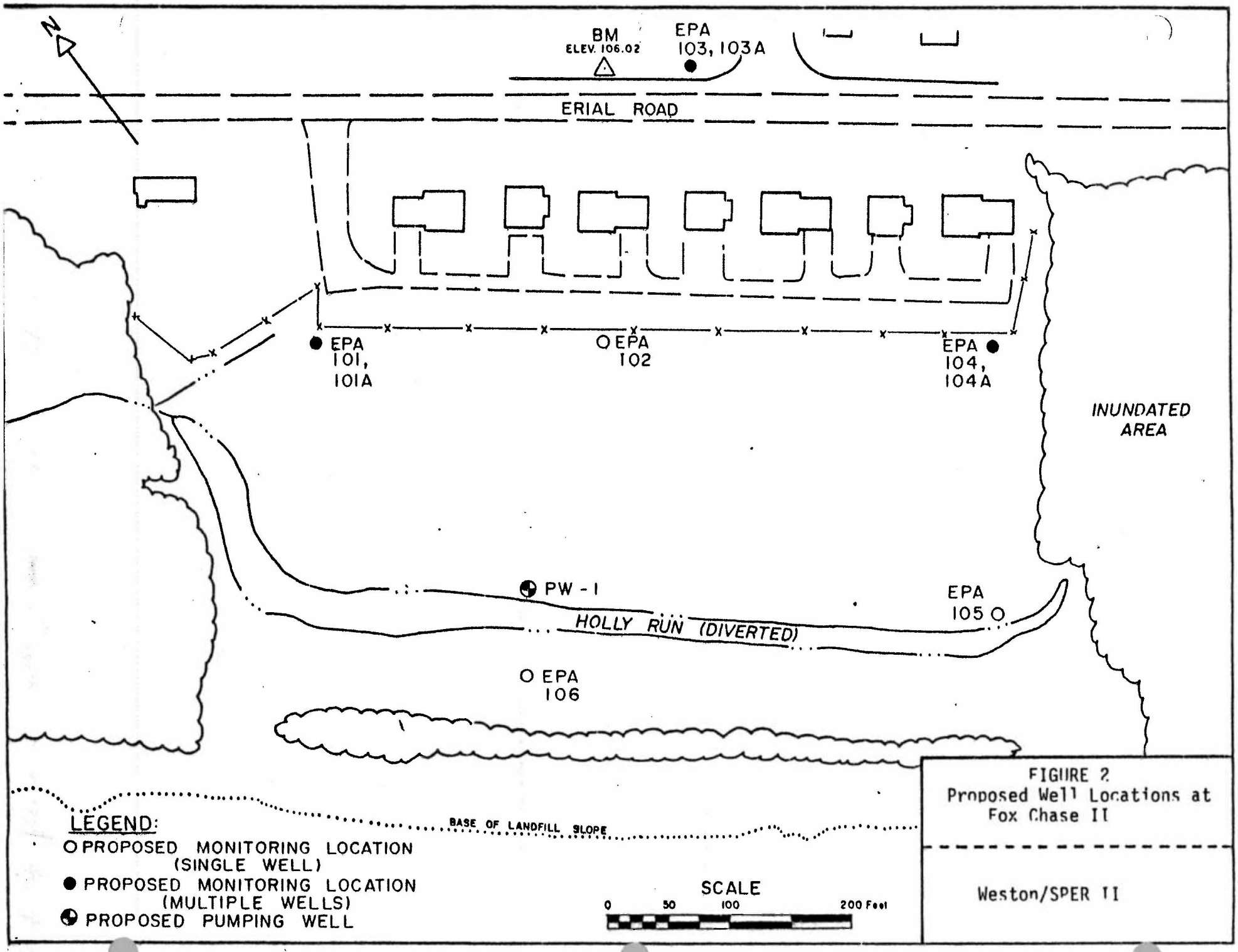


FIGURE 2
Proposed Well Locations at
Fox Chase II

Weston/SPER II

300025

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

September 22, 1983

Ms. Carole Dennis
Director of Community Services
Township of Gloucester
P.O. Box 8
Blackwood, New Jersey 08012

Dear Ms. Dennis:

This is to confirm our continued intent to brief Gloucester Township concerning drilling and other activities expected to commence on or about October 3, 1983 under the direction of EPA's Emergency Response Branch. A meeting had been proposed by us for September 15, 1983 in order to provide a briefing concerning our activities.

We would like to schedule a meeting to provide a technical in-depth briefing to keep the Town informed of activities at or near the site. As per discussion between you and George Zachos of my staff, we have no objection to the presence of your counsel as long as he does not discuss issues relative to prospective litigation.

EPA does not intend to drill on the Landfill, and we will only enter Township property if we have to use existing monitoring wells. Should this be necessary, advance notice will be given to the Township. If any samples are taken from Township property, the Town officials will be notified to arrange for split sampling, if desired.

Please call either George Zachos (201) 321-6647 or me (201) 321-6657 so that we can arrange a meeting.

Sincerely yours,

Fred N. Rubel, Chief
Emergency Response Branch

bcc: George Zachos, 2OERR-ER
Bill Librizzi, 2OERR
Larry Diamond, 2ORC-WST

2OERR:ER:GZachos:cs:disk17:9/22/83:340-6647 FILE: GEMS/Zachos

	2OERR:ER	2OERR:ER	2OERR:ER CONCURRENCES					
SYMBOL	G.N. Zachos	E						
SURNAME	ZACHOS	ELLIOT	RUBEL					
DATE	9/22/83	9-23-83	9/26/83					

EPA Form 1320-1 (12-70) 300028 OFFICIAL FILE COPY

G5-21

ANTHONY FARRO, Chief - Bureau of Site Management

DAVID HENDERSON, Project Manager - BSM

30 MAR 1983

GEMS LANDFILL - FENCING

On Friday, March 28, 1983, while attending a meeting in Edison, I received a call from Cathy Choromanski concerning a complaint about the fence which is being installed at the GEMS Landfill. The call originated with Senator Dalton's staff and I, therefore, phoned the Senator's Office and spoke to Debbie Borie. She explained that Mr. Bauman had complained that we were erecting a fence on his property. I related the details of our work to Ms. Borie explaining that we have a Court Order to proceed and that we were not on Mr. Bauman's property. I further stated that we have secured the services of a licensed surveyor expressly for the purpose of avoiding Mr. Bauman's property. Ms. Borie requested I call Mr. Bauman and explain the circumstances to him.

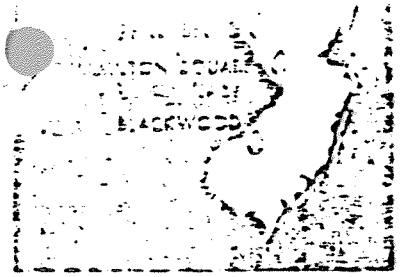
At 1445 I call 609/424-9400 extension 370 and reached Mr. Bauman. Mr. Bauman related to me that workers were on his property and that he was going to have them arrested. He stated that although he did not have title to the strip of land adjacent to the lake, that it was legally his because he has cared for it for three years. I explained that the property on which our surveyors were working was under the control of the Bankruptcy Court and that the Federal Judge has granted permission for the USEPA and NJDEP to conduct fencing activities. He then stated he would go to Court and attempted to block our work and if he did not succeed he would cut the fence and tear it down. I notified him that I had taken note of his comments and closed the conversation.

HS8:cb

cc: [redacted]
J. Burke, ORS
Dr. Sadat
L. Romino
J. Buttich
P. Cole

300027

G-18-0011 Pg. 7



Garden State Water Company

Blackwood District • 45 S. Black Horse Pike • P.O. Box 275
Blackwood, New Jersey 08012 • Telephone: 609-227-3322

March 6, 1981

Mr. Barry Hoffmann
Township Manager
Township of Gloucester
P.O. Box 8
Blackwood, New Jersey 08012

Dear Mr. Hoffmann:

Phone calls from concerned residents and recent newspaper articles have brought to our attention the dumping of material at the G.E.M.S. Landfill containing high concentrations of DDD. While our Engineering Department has had several contacts with the NJDEP regarding this material, we remain concerned over any potential threat to the integrity of the ground water supplies in the area. DDD (Dichlorodiphenyldichloroethane) TDE, not DDT similar to DDT

The Water Company has not been directly contacted by any local or state agency regarding a potential hazard; however, I would appreciate it if your office would keep us informed so that together the Water Company and the Township can work to maintain and protect a safe, adequate and dependable water supply for the residents of Gloucester Township.

Very truly yours,

Paul D. Schumann

Paul D. Schumann
President

cc Mr. George F. Powell, P.E.
Garden State Water Company

PDS/le

300028