HEALTH AND SAFETY PLAN
FOR THE
LONE PINE LANDFILL SITE
FREEHOLD, NEW JERSEY

DOC. NO:

113-ES1-WP-CKDJ-1

APRIL 1986

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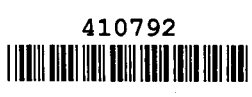

LONE PINE HEALTH AND SAFETY PLAN

APPROVAL SIGNATURES

The undersigned have read and they agree with the guidelines and procedures contained herein. This Health and Safety Plan will be implemented by the REM II team during the technical oversight activities to be conducted at the Lone Pine Landfill Site, in Freehold Township, Monmouth County, New Jersey.

SIGNATURES

Robert Holt — Site Manager — 4-9-86 — Date

George Kley — Regional Manager — 9 April 1986 — Date

Peter J Gorton — REM II Regional Health and Safety Supervisor — 10 April 1986 — Date

Marlin S. Matthaei — REM II Health and Safety Manager — 4-15-86 — Date

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LONE PINE HEALTH AND SAFETY PLAN

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1.0 PURPOSE

The REM II Lone Pine Health and Safety Plan (LP HSP) is to develop site specific health and safety requirements in support of the technical oversight of the field activities at the Lone Pine site. It is intended for the use of REM II personnel only, and it derives from and conforms to REM II Health Safety Assurance Manual (HASM) and CDM's Corporate Health and Safety policies. The actual field work will performed by S.S. Papadopulos and Associates (SSPA) and their Subcontractors. A copy of the SSPA Health and Safety Plan is attached to this document. The attachment of the SSPA Health and Safety Plan to the REM II LPHSP does not constitute REM II approval of the SSPA Health and Safety Plan.

The LP HSP is a stand-alone document and it will be evaluated continuously so as to incorporate changes that may be required from information generated during the performance of the work.

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2.0 FIELD ACTIVITIES

REM II personnel will provide technical oversight for the following activities.

- o Oversight of ground water sampling sample splitting, slug testing and water level measurements at on-site monitoring wells
- o Oversight of ground water sampling with sample splitting, slug testing and water level measurement at off-site monitoring wells
- o Oversight of surface water sampling with sample splitting, and water stage measurement at off-site river stations.

During the sampling of both ground water and surface quality, the REM II oversight personnel will obtain split samples. However, obtaining split samples will consists only of supplying SSPA personnel with the appropriate number and size of containers for the collection, by SSPA, of the water sample and receiving, from SSPA, the filled containers. Obtaining split samples will <u>not</u> consist of having REM II personnel in any way participating in the procedures of the actual collection of the sample. Similarly during the activities of slug testing, and water level measurement REM II oversight personnel will be noting that the EPA approved procedures are effected but without actually participating in the procedures. During river water elevation measurements and surface water sampling at the river stations, REM II oversight personnel will note that the EPA-approved procedures are effected, and will obtain split samples of the river water quality samples.

Throughout the oversight work, REM II personnel will always stay upwind and at least 10 ft away from the point where the actual activity will be occurring.

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3.0 SITE EVALUATION

The following subsections, 3.1 and 3.2 give a brief site description and site history of operation. Move detailed information is contained in Work Plan (WP) and Project Operations Plan (POP) issued under Work Assignment 13-2L17.

3.1 GENERAL SITE DESCRIPTION

Lone Pine Landfill is a former municipal solid waste disposal site located on Burke Road in Freehold Township, Monmouth County, New Jersey. The site is a landfill approximately 45-acres in area, situated on a 144-acre parcel. The landfill generally consists of a large flat-topped mound with an average height of 40 to 50 feet above the natural grade. The northern toe of the landfill slope lies approximately 600 feet south of the main headwaters of the Manasquan River. The average depth of the headwaters of the Manasquan River, as reported by field personnel, does not exceed 2 feet over the river's length from the extreme west point to the intersection with Burke Road.

The site lies within the four square mile headwaters subbasin of the Manasquan River. The site generally drains from the southwest to the northeast towards the Manasquan River. The Metedeconck River watershed divide is immediately adjacent to the property on the south side. Geologic studies in the area reveal that the site, which is in the Atlantic Coastal Plain province, is underlain by unconsolidated gravel, sand and clay.

3.2 BRIEF SITE HISTORY OF OPERATION

The Lone Pine Landfill began accepting municipal solid waste in 1959. Wastes were apparently deposited in the landfill by excavating as much as 10 feet into the Vincentown formation. Quantities of septic tank liquid wastes and commercial liquid organic wastes were disposed of at the site in the 1970s. In 1978 a substantial number of 55-gallon drums of chemical wastes were buried at the site (it has been estimated and up to 50,000 drums may have been buried). A limited program of drum excavation and

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sampling has shown that a variety of organic priority pollutant substances, heavy metals, and pesticides are contained in the rusted and corroded leaking drums. Other information indicates that approximately 2 million gallons of spent toluene solvent and several hundred hundred thousand gallons or more of other bulk chemical wastes were placed in the landfill in the 1970s. In addition, soil that may have been contaminated by methylene chloride wastes was excavated from the area across Burke Road and deposited in the landfill.

During previous investigations 41 monitoring wells have been installed on and off site locations. Under the Supplemental Remedial Investigation, 12 additional ground water wells will be installed at off site locations. The locations of the existing and new monitoring wells are shown on Figure 1.

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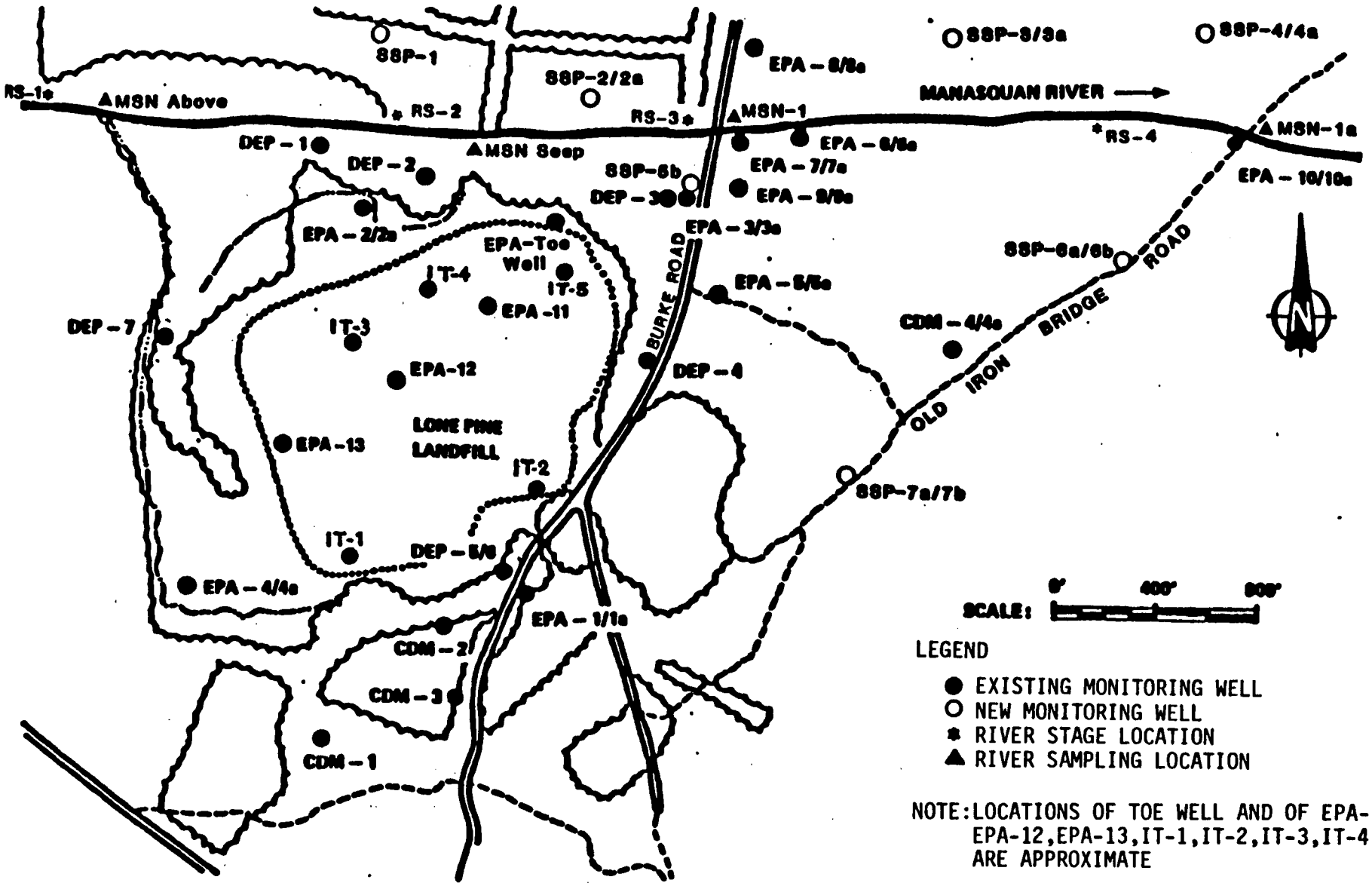

LEGEND

- ● EXISTING MONITORING WELL
- ○ NEW MONITORING WELL
- ✱ RIVER STAGE LOCATION
- ▲ RIVER SAMPLING LOCATION

NOTE: LOCATIONS OF TOE WELL AND OF EPA-11, EPA-12, EPA-13, IT-1, IT-2, IT-3, IT-4, IT-5 ARE APPROXIMATE

BASE MAP: FRED C HART ASSOCIATES INC.
LONE PINE LANDFILL
HYDROLOGIC INVESTIGATIONS,
30 APRIL 1982

CDM

environmental engineers, scientists, planners & management consultants

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FIGURE 1

LONE PINE LANDFILL

SITE MAP

4.0 SITE WORK HAZARD EVALUATION

4.1 CHEMICAL HAZARDS

The history of operations of the site indicates that solvents, pesticides heavy metals and a variety of organic pollutants may have been deposited at the landfill. Previous sampling of the ground water wells shows that compounds such as benzene, trans-1,2-dichloroethane, ethylbenzene, ethylene chloride, toluence, trichloroethylene, and xylenes have been quantified well in excess of 1,000 ppb. Ground water heavy metals data indicate that Arsenic (As) and Zinc (Zn) were measured at the maximum concentration of 0.92 and 1.63 mg/l respectively, with the rest of the priority metals being at the 0.1 mg/l level and with cyanide below detection limits. Therefore, on the basis of existing data volatile organics are the compounds of concern. Table A shows the highest ground water observed concentration for the volatile organic compounds. Due to the relatively high volatilization of these compounds, and assuming that these highest observed concentrations exist at every well and sampling station, the REM II oversight personnel will stand upwind and at least ten (10) feet away from the well during the opening, purging and sampling of the well.

Since none of the activities involve sampling or disturbing sediments in an intrusive manner, soil contamination will not be dealt with here.

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TABLE A

Compound	TLV/PEL (IDLH) ppm	MAX OBSERVED GROUND WATER CONCENTRATION (ppb)
Benzene	10(2,000)	7,300
chlorobenzene	75(2,400)	700
1,1-dichloroethane	100(4,000)	208
Trans-1,2-dichloroethane	10(1,000)	1,655
Ethylbenzene	100(2,000)	3,325
Ethylenechloride	100(5,000)	1,200
Vinylchloride	1(5)	334
1,1- dichloroethylene	5	61
1,2- dichloroethylene (CIS and trans)	200(4,000)	2,128
Tetrachloroethylene	50(500)	76
Toluece	100(1,000)	4,708
Trichloroethylene	50(1,000)	1,423
Acetone	(20,000)	8,000
2-butanone		8,100
4-methyl-2-pentanone		750
Styrene	100(5,000)	260
Xylenes (Total)	100(10,000)	4,300

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4.2 PHYSICAL HAZARDS

Care should be exercised in approaching wells located at the northern edge of the landfill because of the slope and vegetation in that area. The river stations should be approached from the northern bank of the river and proceeding eastwards from Burke Road. As noted in subsection 3.1, the headwaters of Manasquan River on the north side of the landfill form a stream of average depth less than 2 feet. Since REM II oversight personnel will not enter the stream no life vest or live lines will be required.

All of the oversight work will be conducted during mid-April, hence cold exposure and heat stress problems are not expected to arise. Field personnel involved in the installation of on-site wells have not reported unusual problems with accessing any of the existing wells, insects, or problematic vegetation.

4.3 OVERALL HAZARD RATING

On the basis of existing data and reports from field personnel involved in the installation of the existing monitoring wells, all the points on and off site were given a low hazard rating for technical oversight work. All of the wells will be approached with level C respiratory protection level with the potential to downgrade to modified D, and all of the river stations will be approached with level C protection with the potential to downgrade to level D. In all cases the contigency for evacuating the site exists. Details are given in Table B. The basis for establishing and altering an existing protection level in given in subsection 5.3.

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TABLE B

OVERALL HAZARD RATING

LOCATION	HAZARD LEVEL+	EXPOSURE ROUTE	PROTECTION LEVEL (CONTIGENCY)	
WELLS				
EPA-3/3a, EPA-7/7a, EPA-9/9a	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
EPA-11, EPA-12, EPA-13, TOE WELL	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
IT1, IT2, IT3, IT4, IT5, DEP-3,	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
SSP5b	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
EPA-1/1a, EPA-2/2a, EPA-4/4a, EPS-5/5a	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
EPA-6/6a, EPA-8/8a, EPA-10/10a	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
DEP-1, DEP-2, DEP-4, DEP-5/6, DEP-7	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
CDM-1, CDM-2, CDM-3, CDM-4/4a	LOW	RESPIRATORY-DERMAL	C	D*/EVACUATE
RIVER STATIONS				
RS-1, RS-2, RS-3, RS-4	LOW	RESPIRATORY-DERMAL	C	D/EVACUATE
MSN Above, MSN Seep	LOW	RESPIRATORY-DERMAL	C	D/EVACUATE
MSN-1, MSN-1a	LOW	RESPIRATORY-DERMAL	C	D/EVACUATE

D* - Modified D level

+ - It assumes that REM II personnel will always remain upwind and at least 10 feet away from the point of actual field activity.

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5.0 HEALTH AND SAFETY REQUIREMENTS

5.1 PERSONNEL PROTECTIVE EQUIPMENT

Level D protection will consist of the following:

- o Work clothing as dictated by weather.
- o Steel-toed and steel shank safety boots.
- o Work gloves.

Modified level D will consist of the following:

- o Saranex-tyvek coveralls.
- o Boot Covers.
- o Nitrile or Neoprene gloves over surgeons gloves.

Level C will consist of the following, in addition to modified D.

- o Full face air purifying respirator, MSA, with GMC-H carriages.
- o Outergloves and boot covers taped to saranex tyveks.

All prescription eye-glasses shall be safety glasses and prescription lenses shall be provided for full face respirators. Contact lenses are prohibited from all areas.

5.2 MONITORING EQUIPMENT

Air quality monitoring equipment consisting of an HNu will be used by SSPA personnel. It is important that the HNu used must be equipped with a 11.7 eV probe. The instrument is to be used by SSPA personnel to establish the upwind background reading, and also the air quality at the well when it is opened, purged, sampled or when water level measurements are to be made. The HNu will also be used to monitor the air quality over the pumped water. REM II oversight personnel will use an HNu (with 11.7eV probe) or an Organic Vapor Analyzer (OVA) to conduct separate air quality monitoring.

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5.3 ACTION LEVELS

The following action levels will be used for all activities at all locations.

a. An off-site background level will be established as a minimum on a daily basis.

b. Discontinuous readings above background will require caution. A reading significantly greater than 5 ppm above background will require re-evaluation of the activities and levels of protection.

c. Continuous, 15 min. Time Weighted Average (TWA) readings above background to 5ppm will dictate a minimum of level C protection.

d. Continuous, 15 min. TWA readings of 5ppm to 50ppm above background will dictate a minimum of level B protection. Since level B gear will not be carried to the field, this is equivalent to evacuating the site and re-evaluating the activities and levels of protection.

e. Continuous, 15 min. TWA at 50ppm and above will dictate immediate site evacuation.

In addition, whenever the REM II oversight personnel will be splitting water samples with SSPA, modified level D will be utilized by the REM II personnel. Visual observations such as discoloration of soil or river water, odors (upgrade only), and working in areas of known contamination will also constitute grounds to upgrade the protection level.

Strict adherence to the application of these Action Levels will be practiced by the REM II oversight personnel who will advise SSPA personnel of changes of protection levels. In case there is difference of opinion on health and safety procedures, air monitoring, deacon and such matters, the REM II personnel will follow the procedures outlines in Section 7.0.

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6.0 SITE ORGANIZATION AND DECONTAMINATION

6.1 SITE ORGANIZATION

Presently there is a formal entrance to this site but there is no perimeter fencing that encloses the landfill, thus all on-site wells can be accessed by that entrance. For all activities a personnel decontamination area will be established on the gravel road west of the entrance (refer to Figure 2). Non-disposable reusable items such as safety boots will be thoroughly washed with an alconox detergent followed by a rinse with potable water. Disposable clothing (i.e. tyveks, boot covers, and inner/outer gloves) will not be reused by REM II oversight personnel. These items will be collected daily in plastic trash bags and stored on site.

REM II respirators will be rinsed with potable water in the field and allowed to drip dry then inserted into a plastic bag after each use. These respirators will be cleaned at the end of each day using a MSA sanitizing solution followed by a potable water rinse. REM II respirators will be inspected daily by REM II oversight personnel for damage, missing parts and proper functioning. Cartridges will be disposed of in the plastic trash bags at the end of each day.

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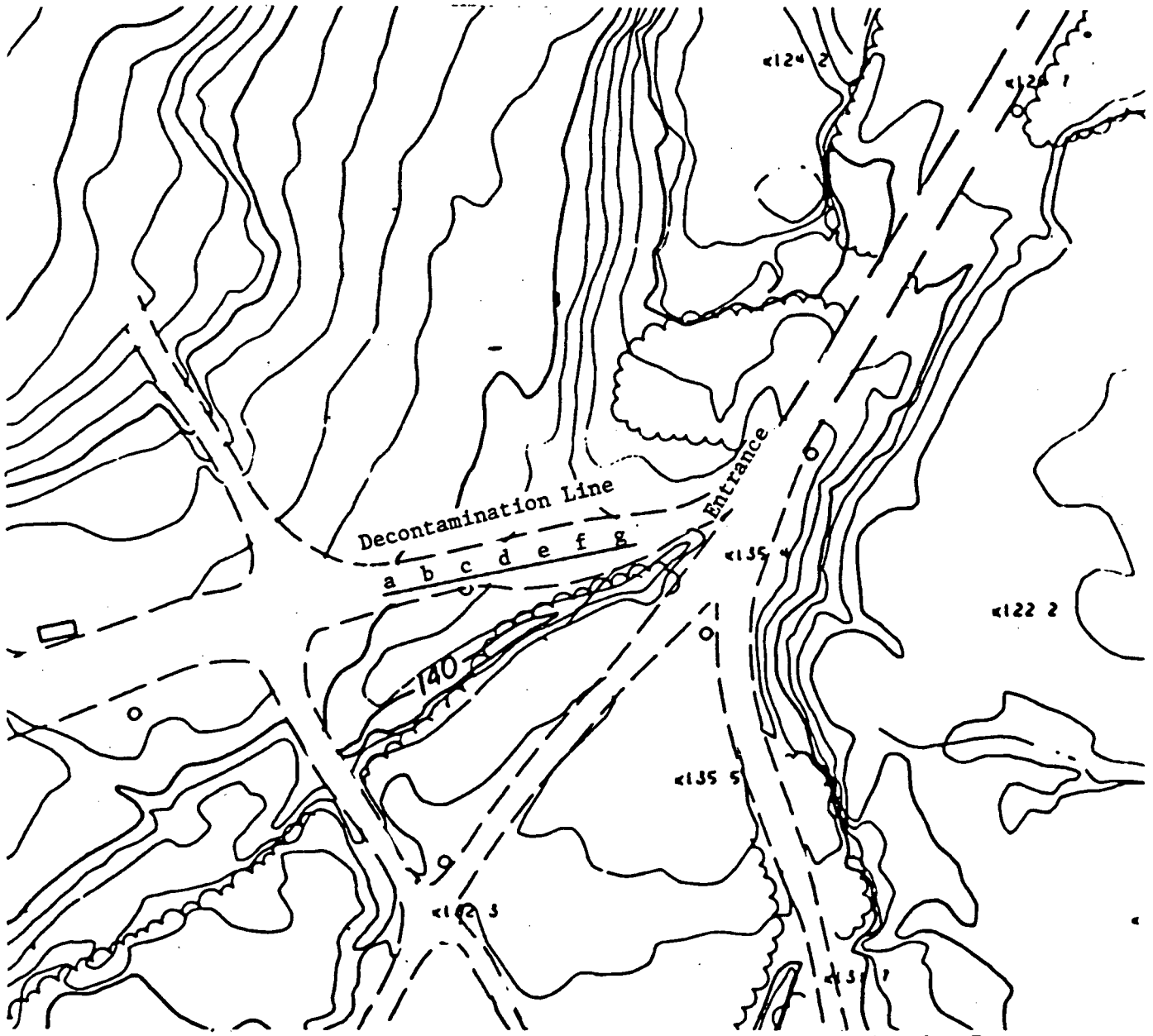

Key to Decontamination Process

a. Boot cover and glove wash, removal, and disposal
b. Tyvek and safety boot rinse
c. Remove safety boots
d. Remove and dispose of tyvek
e. Wash inner gloves
f. Remove and rinse respirator
g. Remove and dispose inner glove

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FIGURE 2
Location of Decontamination Line
Lone Pine Landfill
Freehold, New Jersey

7.0 RESPONSIBILITIES

The REM II project team and their responsibilities are described below:

REM II Team Personnel	Responsibilities
Barbara Simpson	Health and Safety Coordinator
Tom Hughes	Technical Oversight Personnel
Shahid Mahmoud	Technical Oversight Personnel

The Site Manager and Site Health and Safety Coordinator or his assistant have the following responsibilities in relationship to this Health and Safety Plan:

- Conduct kickoff meeting prior to any field work involving all REM II oversight personnel.
- Ensure that oversight personnel are aware of provisions of this plan and are instructed in the work practices necessary to ensure safety while conducting oversight activities
- Ensure that oversight personnel are aware of the emergency contact numbers and the location of the hospital
- Ensure that oversight personnel are aware of the potential hazards associated with site and in providing oversight
- Ensure that appropriate personnel protective equipment and clothing are available for all oversight personnel

It has been assumed that the REM II team will be providing technical oversight only. The REM II oversight personnel will not be responsible for conducting field work or for collecting samples.

REM II personnel will be splitting samples with the SSPA personnel. SSPA personnel will perform all the tasks associated with obtaining water samples whether from a well or the river and supplying such water to REM II personnel. During the water level measurement, slug testing and river stage determination, the REM II personnel's role will be non-participatory technical oversight function. REM II personnel will decontaminate the

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samples they receive by wiping the sample container with a paper towel wetted with deionized water.

The assigned REM II oversight personnel will be responsible for assuming the Site Health and Safety Coordinator (SHSC) role. Therefore, the REM II SHSC over- sight personnel is responsible for implementing this Health and Safety Plan while at the site and for ensuring that the Health and Safety Plan proposed by SSPA is followed during all site activities.

If the work rules, ambient monitoring using OVA/HNu, upgrade action levels, levels of protective clothing, etc. as proposed in the SSPA Health and Safety Plan are not followed, REM II oversight personnel will be responsible for immediately notifying the SSPA Safety Specialist that they are violating their Health and Safety Plan. If non-compliance by SSPA of their health and safety protocols continues, or if it is apparent that personnel are not aware of these safety provisions and how they should be implemented, REM II oversight personnel will immediately evacuate the site. Upon evacuation, REM II oversight personnel will be responsible for notifying the REM II Site Manager and the Regional Health and Safety Supervisor of the problems that are occurring at the site. It will be the responsibility of the REM II Site Manager and the Regional Health and Safety Supervisor to notify EPA and the REM II Health and Safety Manager. REM II oversight personnel will also be responsible for filing a report of health and safety non-conformances within 48 hours of their occurrence with the REM II Site Manager, the EPA, the Regional Health and Safety Supervisor and the REM II Health and Safety Manager.

REM II oversight personnel also have the following responsibilities:

- o Implementing the provisions of this health and safety plan;
- o Ensuring at minimum the implementation of the provisions of the SSPA Health and Safety Plan by the SSPA Safety Specialist and the SSPA personnel and their subcontractors;
- o Ensuring that SSPA personnel use the HNu and/or OVA to monitor the for volatile organic hazards while conducting all of the site activities;

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- o Ensuring that SSPA Safety Specialist monitors the on-site conditions and modified personnel protection levels including clothing and equipment as needed to maintain personnel safety;

- o Monitoring the performance of all on-site SSPA personnel and their subcontractors to ensure that the safety procedures specified in the attached SSPA Health and Safety Plan are followed. If established work and safety rules are not followed, the REM II oversight personnel will be responsible for filing a report of the incident;

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8.0 EMERGENCY INFORMATION

Emergency communications will be maintained by the REM II oversight personnel with the appropriate REM II personnel (i.e., the REM II Site Manager and Regional Health and Safety Supervisor) during all on-site oversight activities. It will be the responsibility of the REM II oversight personnel to determine the location of the nearest phone.

Emergency telephone numbers and direction to the nearest hospital, Freehold Area Hospital (201-431-2000), are given on page 5 of the SEF. The Route to the hospital is shown in Figure 3. In addition, the emergency telephone numbers and hospital telephone number and location information will be kept in the REM II vehicle(s) used by the REM II over- sight personnel.

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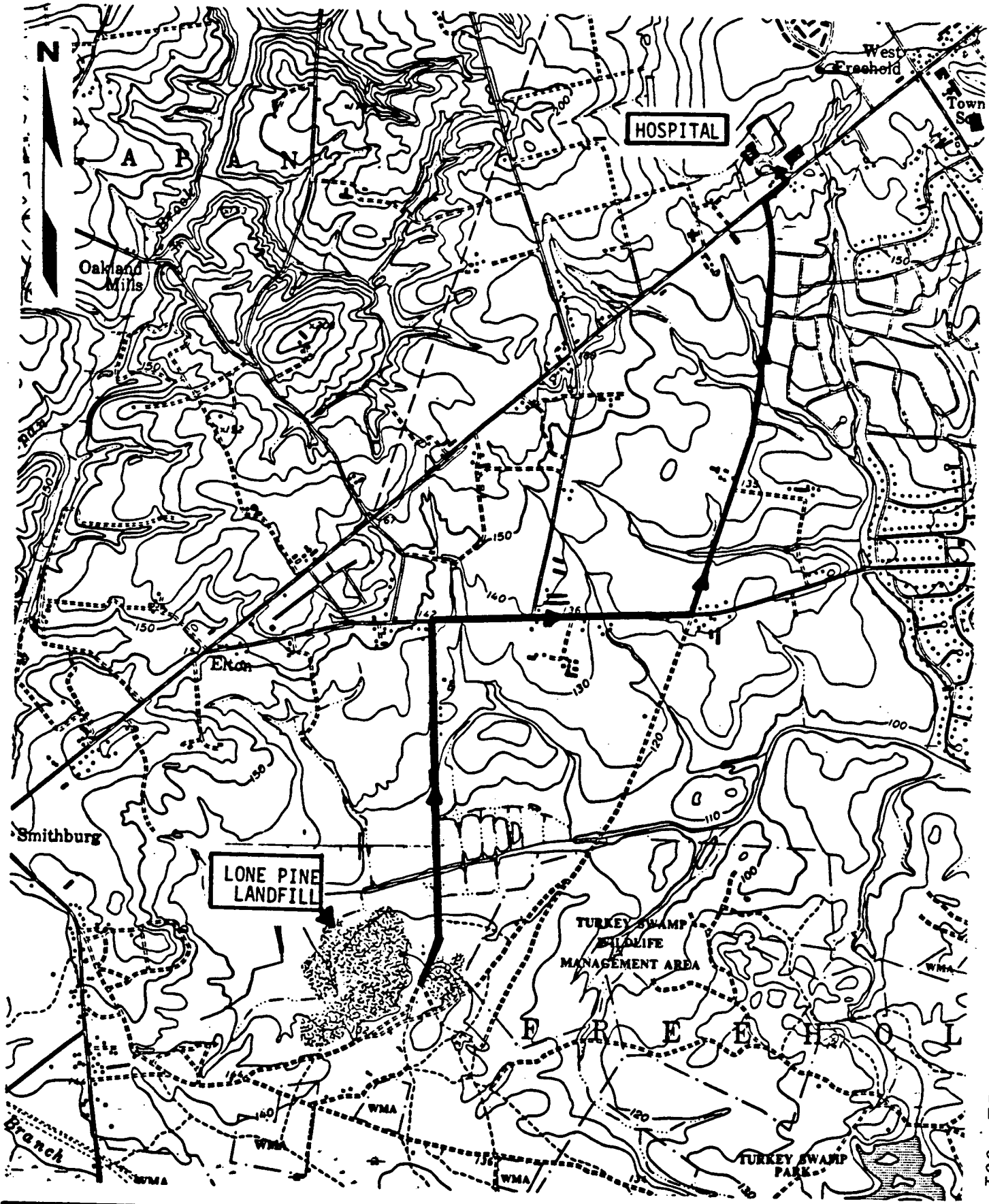

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FIGURE 3

ROUTE TO HOSPITAL

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9.0 CONTACTS

A list of agencies or personnel who should be contacted in case of an emergency are listed below:

o Hospital:	(201) 431-2000
o Police:	(201) 462-7500
o Fire:	(201) 462-2112
o Peter Gorton - Office:	(201) 225-7000
REG II H&S Supervisor Home:	(201) 545-8283
o Bob Goltz: Site Manager	(212) 693-0370
o Poison Control Center:	(800) 962-1253
o EPA Emergency Response Team:	(201) 548-8730
o State Police:	(201) 462-5712

The above list will be combined with page 5 of 6 of the SEF and will be posted at the entrance to the landfill on Burke Road.

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10.0 SAFETY BRIEFING TOPICS

All REM II oversight personnel will be required to read and understand the SSPA Operations Plan for Supplemental Remedial Investigation Plan for Lone Pine Landfill which contains the site's Sampling Plan, the Quality Assurance Plan and the Health and Safety Plan as well as the REM II Health and Safety Plan prior to conducting any oversight activities. In addition, the following topics will be discussed with oversight personnel to their conducting oversight activities at the Lone Pine Landfill Site:

- o Site conditions
- o Types of contaminants associates with the site
- o Pathways of exposure
- o Work zone definitions
- o Work rules and safe work practices
- o Levels of protection for each task
- o Personnel protective clothing to be used
- o Action levels
- o Field Monitoring equipment
- o Decontamination procedures
- o Responsibilities at the site in terms of health and safety
- o Equipment training as necessary

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APPENDIX 1

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

EPA WA NO._____ REM II DOC. NO._____

SITE Lone Pine Landfill EPA REGION II

LOCATION Freehold, New Jersey EVALUATOR M. T. Kontaxis

SITE DESCRIPTION Former municipal landfill into which drummed and liquid wastes have been disposed. Exact location of drums is not known

SITE MAPS ATTACHED [X] Site map and route-to hospital map

BACKGROUND ENVIRONMENT

AIR Systematic ambient air monitoring was not conducted. Air sampling near on-site wells yielded significant readings.

SOIL Quality sampling has not been conducted

SURFACE WATER Low concentrations of volatile organics quantified.

GROUNDWATER Contamination has been quantified; see Attachment A for details.

ADDITIONAL HAZARDS ON-SITE

INFORMATIONAL SOURCES USED RI/FS

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO._____

FIELD INVESTIGATION ACTIVITIES COVERED UNDER THIS SEF

POP DOCUMENT CONTROL NO._____

TASK NO.	DESCRIPTION	PRELIMINARY SCHEDULE
A	Oversight of groundwater sampling (sample splitting), slug testing and water level measurement at on-site monitoring wells.	4/14/86
B	Oversight of groundwater sampling (sample splitting), slug testing and water level measurement at off-site monitoring wells.	
C	Oversight of surface water sampling, sample splitting and water stage measurement at off-site river stations.	
	During the performance of the oversight function in Tasks A,B, C above, REM II personnel will exercise contamination avoidance at all times, by always remaining upwind and at least 10 feet from the point where the actual field activity will be occuring. The actual sampling will be done by PRP's the subcontractor SSPA. The REM II team will obtain split samples, in tasks A and B above, by supplying SSPA personnel with the appropriate bottles which will be filled by SSPA personnel and then returned to the REM II team.	

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REM II DOC. NO._____

CONTAMINANTS OF CONCERN

CONTAMINANT	GUIDELINE SHEET ATTACHED	I.D.L.H. (PPM)	SOURCE/QUANTITY CHARACTERISTICS	ROUTE OF EXPOSURE	SYMPTOMS OF ACUTE EXPOSURE
	SEE ATTACHMENT A				

INSTRUMENT RESPONSE FACTORS

P.I.D.[1]	F.I.D.[2]	OTHER

1. IONIZATION POTENTIAL (eV)
2. % AS CH_4

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO._____

SITE PERSONNEL

SITE ACTIVITY Oversight of groundwater sampling,slug testing and water level measurement at on-site monitoring wells. Also sample splitting

PERSONNEL

NAME	S.S. NO.	FIRM	REGION	LEVEL OF PROTECTION	CONTINGENCY	VERIFY
Thomas Hughes	044 54 3735	CDM	II	C	mod D/Site Evac.	( )
Barbara Simpson		CDM	II	C	mod D/Site Evac.	( )
Shahid Mahmoud		ICF	II	C	mod D/Site Evac.	( )
						( )
						( )
						( )

PERSONNEL PROTECTIVE EQUIPMENT — VERIFY

mod D.:Saran covered tyvek,nitrile or neoprene gloves over surgeons gloves, disposable rubber booties, steel toe/shank boots. ( )

C: APR with GMCH cartridges, MSA full face mask saran coveredtyvek, disposable rubber booties, steel toe/shank boots, nitrile gloves over surgeons gloves. ( )

_____ ( )

_____ ( )

_____ ( )

FIELD MONITORING EQUIPMENT — VERIFY

FIELD MONITORING EQUIP.: OVA/HNu with 11.7eV probe ( )

CRITERIA FOR PROTECTION LEVEL CHANGES:

Upgrade to C if continuous 15min TWA readings are between above background and 5 ppm. ( )

Upgrade to B if continuous 15min TWA readings are between5 and 50 ppm above background. ( )

Evacuate site if continuous 15min TWA readings are at 50ppm and above. ( )

DECON Disposable items will be put in large plastic trash bags and left on site. Re-usable items to be thoroughly washed at decon line near entrance to landfill.

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO.

SITE PERSONNEL

SITE ACTIVITY Oversight of grondwater sampling,slug testing and water level measurement at off-site monitoring wells. Also sample splitting

PERSONNEL

NAME	S.S. NO.	FIRM	REGION	LEVEL OF PROTECTION	CONTINGENCY	VERIFY
Thomas Hughes	044 54 3735	CDM	II	C	mod D/Site Evac.	( )
Barbara Simpson		CDM	II	C	mod D/Site Evac.	( )
Shahid Mahmoud		ICF	II	C	mod D/Site Evac.	( )
						( )
						( )
						( )

PERSONNEL PROTECTIVE EQUIPMENT

VERIFY

mod D.:Saran covered tyvek,nitrile or neoprene gloves over surgeons gloves, disposable rubber booties, steel toe/shank boots. ( )

C: APR with GMCH cartridges, MSA full face mask saran coveredtyvek, disposable rubber booties, steel toe/shank boots, nitrile gloves over surgeons gloves. ( )

( )

( )

( )

FIELD MONITORING EQUIPMENT

VERIFY

FIELD MONITORING EQUIP.: OVA/HNu with 11.7eV probe ( )

CRITERIA FOR PROTECTION LEVEL CHANGES:

Upgrade to C if continuous 15min TWA readings are between above background and 5 ppm. ( )

Upgrade to B if continuous 15min TWA readings are between5 and 50 ppm above background. ( )

Evacuate site if continuous 15min TWA readings are at 50ppm and above. ( )

( )

DECON Disposable items will be put in large plastic trash bags and left on site. Re-usable items to be thoroughly washed at decon line near entrance to landfill.

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO._____

SITE PERSONNEL

SITE ACTIVITY Oversight of surface river water sampling,water stage measurement at off-site river stations. Also sample splitting.

PERSONNEL

NAME	S.S. NO.	FIRM	REGION	LEVEL OF PROTECTION	CONTINGENCY	VERIFY
Thomas Hughes	044 54 3735	CDM	II	C	D/Site Evac.	( )
Barbara Simpson		CDM	II	C	D/Site Evac.	( )
Shahid Mahmoud		ICF	II	C	D/Site Evac.	( )
						( )
						( )
						( )

PERSONNEL PROTECTIVE EQUIPMENT

VERIFY

D : Nitrile or neoprene gloves over surgeons gloves, disposable rubber booties, steel toe steel shank boots. ( )

C: APR with GMCH cartridges, MSA full face mask saran coveredtyvek, disposable rubber booties, steel toe/shank boots, nitrile gloves over surgeons gloves. ( )

_____ ( )

_____ ( )

_____ ( )

FIELD MONITORING EQUIPMENT

VERIFY

FIELD MONITORING EQUIP.: OVA/HNu with 11.7eV probe ( )

CRITERIA FOR PROTECTION LEVEL CHANGES:

Upgrade to C if continuous 15min TWA readings are between above background and 5 ppm. ( )

Upgrade to B if continuous 15min TWA readings are between5 and 50 ppm above background. ( )

Evacuate site if continuous 15min TWA readings are at 50ppm and above. ( )

DECON Disposable items will be put in large plastic trash bags and left on site. Re-usable items to be thoroughly washed at decon line near entrance to landfill.

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO._____

CONTINGENCY CONTACTS

● DENOTES REQUIRED INFORMATION

AGENCY	CONTACT	PHONE NO.	AGENCY	CONTACT	PHONE NO.
● FIRE DEPARTMENT		(201)462-2112	STATE POLICE		(201)462-5712
POLICE DEPARTMENT		(201)462-7500	F.A.A.		(201)364-6921
HEALTH DEPARTMENT		(201)462-7900	CIVIL DEFENSE		(201)431-7400
● POISON CONTROL CENTER		(201)222-2210	● ON SITE COORDINATOR		
● STATE ENVIRONMENTAL AGENCY			24 Hour Hotline For Treatment Of Toxic Exposure		202 896 4136
● EPA REGIONAL OFFICE	Janet Feldstein	(212)264-9589			
● EPA ERT, ICOM					
● STATE SPILL CONTRACTOR					

MEDICAL EMERGENCY

NAME OF HOSPITAL Freehold Area Hospital ADDRESS West Main Street, Freehold, NJ PHONE NO. (201)431-2000

NAME OF CONTACT _____ ADDRESS _____ PHONE NO. _____

MAP OR ROUTE TO HOSPITAL North on Burke Road, Right on Rt. 524, Left on Iron Bridge Road proceed for about 0.5 miles, Hospital at end of Road.

TRAVEL TIME FROM SITE (MINUTES) 15 min. DISTANCE TO HOSPITAL (MILES) 5 miles NAME OF 24 HR. AMBULANCE SERVICE Freehold Area Hospital, West Main Street Freehold, New Jersey

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SITE PERSONNEL PROTECTION & SAFETY EVALUATION FORM

REM II DOC. NO._____

SEF REVIEW I have read, understood, and agreed with the information set forth in this Personnel Protection and Safety Evaluation Form (and attachments) and discussed in Presite Visit Health and Safety briefing.

S.H.S.C. SIGNATURE _____ DATE _____

COMMENTS: _____

R.H.S.S. SIGNATURE _____ DATE _____

COMMENTS: _____

SITE PERSONNEL

Barbara Simpson :Site Health & Safety Coordinator

Thomas Hughes :Technical Oversight Personnel

Shahid Mahmoud :Technical Oversight Personnel

SITE H & S BRIEFING

CONDUCTED AT _____

BY _____ ON _____

BRIEFING TOPICS _____

- o Site conditions
- o Types of contaminants associates with the site
- o Pathways of exposure
- o Work zone definitions
- o Work rules and safe work practices
- o Levels of protection for each task
- o Personnel protective clothing to be used
- o Action levels
- o Field Monitoring equipment
- o Decontamination procedures
- o Responsibilities at the site in terms of health and safety
- o Equipment training as necessary

H.S.M. APPROVAL _____ DATE _____

REM II H & S INPUT BY _____ DATE _____

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ATTACHMENT A

CONTAMINANTS OF CONCERN

CONTAMINANT	TLV/PEL IDLH ppm	SOURCE/QUANTITY CHARACTERISTICS ppb-groundwater	EXPOSURE ROUTES	SYMPTOMS OF EXPOSURE	P.I.D.	F.I.D. % EFFIC.
VOLATILE						
Benzene	10(2000)	7300	Inh, con, ing	Irrit eyes, nose, resp system, CNS	9.24	150
Chlorobenzene	75(2400)	700	Inh, ing, con	Irrit eyes, nose, drowsy, Inconer	9.07	200
1,1 dichloroethane	100(4000)	208	Inh, ing, con	Skin irrit., drowsy		80
Trans 1,2 dichloroethane	10(1000)	1655	Inh, ing, con S. in	Eye irrit., CNS, nausea	9.96	80
Ethylbenzene	100(2000)	3325	Inh, ing, con	Eye irrit., mucous membrane, headache	8.76	100
Methylene chloride	100(5000)	1200	Inh, ing, con	Fatigue, weakness sleepy, lightheaded	11.35	100
Vinyl chloride	1(5)	334	Inh, ing, con	Dizziness, Disorientation	10.00	
1,1 dichloroethylene (Vinylidene chloride)	5	61	Inh, ing, con		9.46	40
1,2 dichloroethylene (Cis and trans)	200(4000)	2128	Inh, ing, con	Eye irrit, resp sys CNS depression	9.96	400
Tetrachloroethylene	50(500)	76	Inh, ing, con	Eye and nose irrit., nausea, flushed face	9.32	71
Toluene	100(1000)	4708	Inh, ing, con Skin	Fatigue, weakness, confusion, dizziness	8.82	110
Trichloroethylene	50(1000)	1423	Inh, ing, con	Headache, visual dist nausea, eye irrit.	9.45	70
Arsenic		0.92 mg/l				
Zn		1.63 mg/l				
Ni	1 mg/m^3	0.10 mg/l				

(110/11)NY

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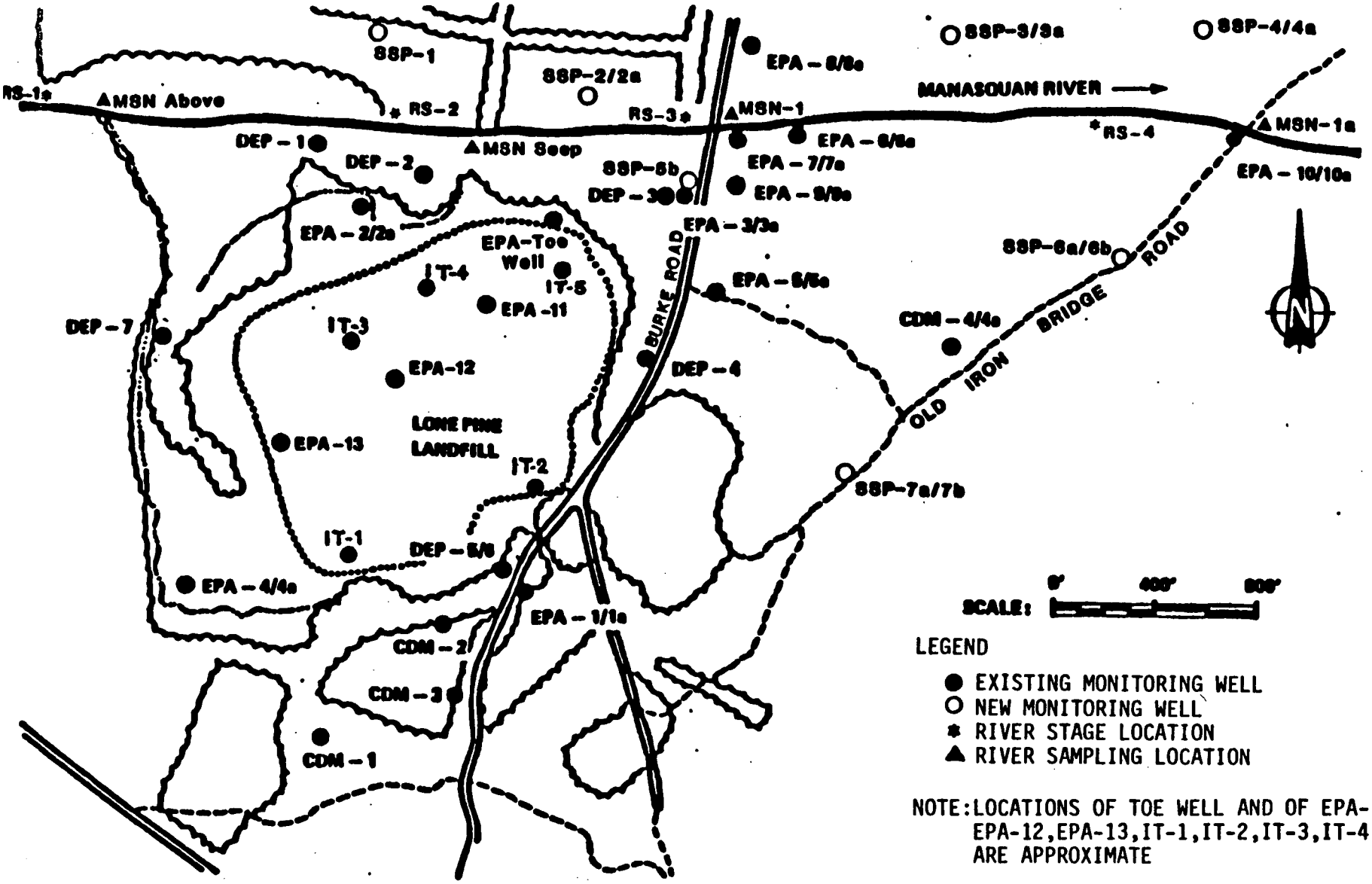

LEGEND

- ● EXISTING MONITORING WELL
- ○ NEW MONITORING WELL
- ✱ RIVER STAGE LOCATION
- ▲ RIVER SAMPLING LOCATION

NOTE: LOCATIONS OF TOE WELL AND OF EPA-11, EPA-12, EPA-13, IT-1, IT-2, IT-3, IT-4, IT-5 ARE APPROXIMATE

BASE MAP: FRED C HART ASSOCIATES INC.
LONE PINE LANDFILL
HYDROLOGIC INVESTIGATIONS,
30 APRIL 1982

CDM

environmental engineers, scientists, planners & management consultants

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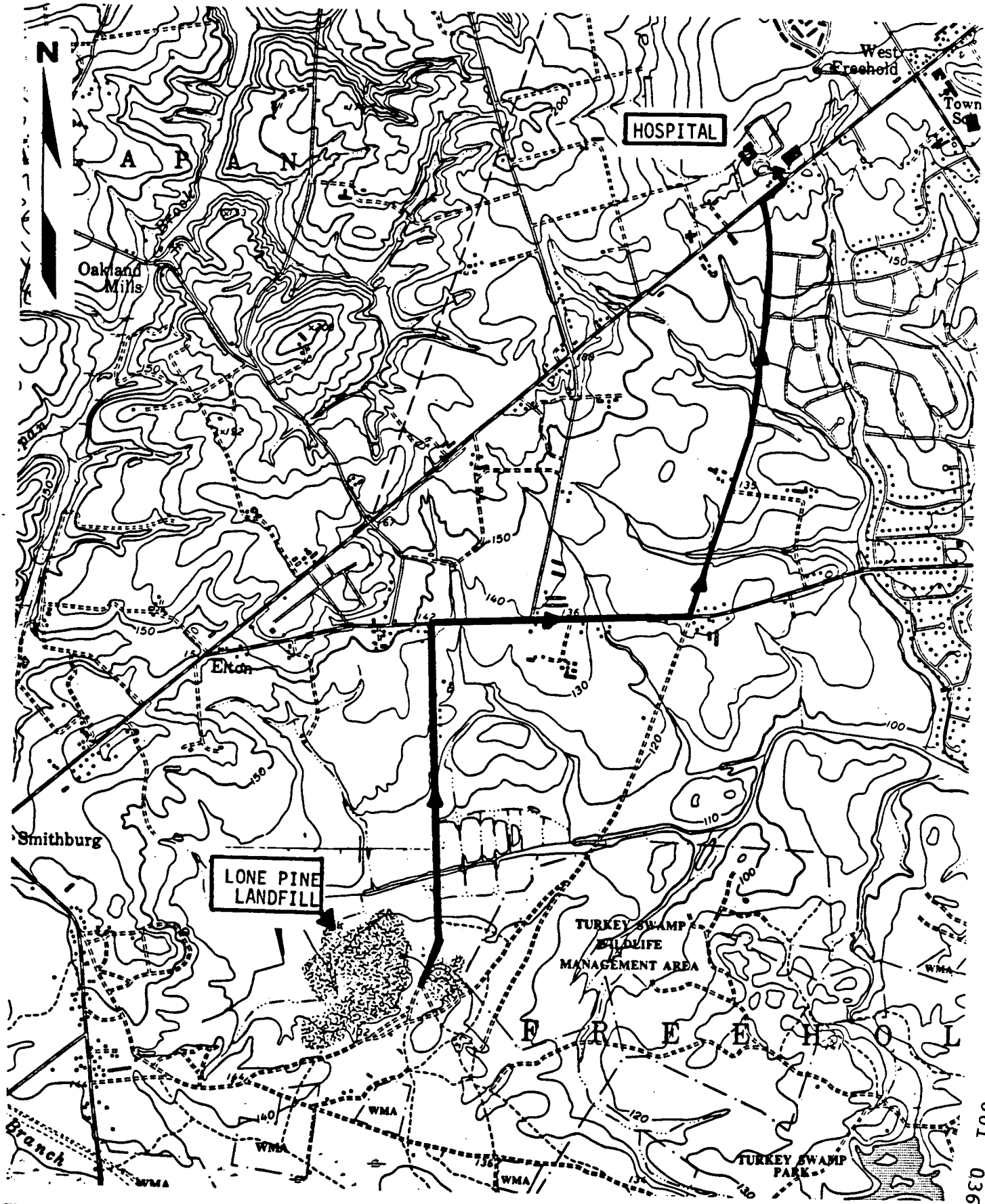
FIGURE 1

LONE PINE LANDFILL

SITE MAP



CDM

environmental engineers, scientists, planners & management consultants

FIGURE 3

ROUTE TO HOSPITAL

LPL 001 0361

APPENDIX 2

APPENDIX D

HEALTH AND SAFETY PLAN
FOR ACTIVITIES OTHER THAN DRILLING
LONE PINE LANDFILL
FREEHOLD, NEW JERSEY

1.0 SITE LOCATION AND DESCRIPTION

The Lone Pine Landfill is south of the Manasquan River and west of Burke Road about 4 to 5 miles southwest of Freehold, New Jersey. Although the landfill has been closed for several years, a number of barrels of chemical wastes were dispensed at the site and covered wih soil. Previous investigations have shown that contaminants, mostly volatile organic compounds (VOCs), have entered the ground water in the Vincentown Formation and upper Red Bank Sand and are moving northeasterly toward the Manasquan River. Except for three existing monitoring wells installed at the landfill mound and possibly the toe well, none of the new or of the other existing wells to be tested and/or sampled during the investigation program are located in areas where known disposal activities occurred.

2.0 OBJECTIVES

After the completion of the 12 new wells, water-level measurements will be made in all of the accessible wells (including the new wells) each week for 8 weeks. Water samples for chemical analysis also will be collected from all wells one time. Short aquifer tests will be performed on the new wells and on a few existing wells of which aquifer characteristics are unknown or

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unavailable. The objective of this Health and Safety Plan is to ensure that no personnel exposure occurs from either ground-water or organic vapors during the conduct of these field activities.

3.0 PERSONNEL PROTECTION

Level C and Modified Level C: Level C protective clothing will be worn onsite at all times and full-face respirators (organic vapor and particulate filters) should be worn any time that an HNu meter shows air contamination above background. If contamination is more than 5 ppm above background, the well site will be evacuated upwind and not reoccupied until it has been determined that hazardous conditions no longer exist.

- Based on past monitoring experience on the site and on chemical analyses from wells, some new or existing wells may require breathing protection during testing, sampling or water-level measurement operations. Air quality will be sampled every morning and periodically during each day at a well that is being tested or sampled or where water-level measurements are to be made. All personnel will have their respirators available at all times.
- Personnel protective equipment shall consist of
  - Air-purifying respirator, full-face, cannister equipped (MSHA/NIOSH approved with cartridges for organic vapors and particulates);
  - Chemical-resistant outer clothing (hooded, one-piece or two-piece chemical splash suit or disposable chemical-resistant overalls);
  - Cold weather protective clothing if weather conditions warrant (under chemical-resistant clothing);
  - Vinyl rain suits if weather conditions warrant;

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- Gloves (outer), chemical-resistant;
- Boots (outer), chemical-resistant; or
- Boots with disposable, chemical-resistant outer boots;
- Hard hat (optional);
- Safety glasses/side shields when not wearing the respirator.

During testing and sampling when water is being discharged and contact with splashing water is likely or during water-level measurements, the Level C protection will be worn at any well known to be contaminated from previous sampling, or where an HNu meter indicates that the atmosphere in the top of the casing is above background, or the well is in an area suspected of being contaminated.

4.0 SURVEILLANCE EQUIPMENT

A calibrated HNu organic vapor monitor will be used to monitor background air upwind within 10 feet of the well head, and in the air column of the well head before testing, sampling, or water-level activities. Air quality at the pump discharge during pumping should also be monitored periodically. Should the instrument indicate that concentrations are not above background, the respirators need not be worn, but if the HNu meter indicates that organic vapors in the well or from the water being discharged are above background readings, a full-face respirator with organic filters will be worn. If the HNu reading is more than 5 ppm above background, the site will be abandoned until either lower readings are obtained or Level B protection (self-contained air support system) can be used.

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5.0 MEDICAL SURVEILLANCE PROCEDURES OF EXPOSURE TO SAMPLING PERSONNEL

Based on the level of contamination observed in the ground water during previous investigations, no medical surveillance will be required for the one time testing and sampling effort or for measurement of water levels. If testing or sampling personnel accidently have prolonged contact with the ground water, a follow-up physical will be conducted to determine any adverse health effects.

6.0 DECONTAMINATION AND DISPOSAL OF EQUIPMENT AND MATERIALS USED IN SAMPLING

All equipment and materials used onsite will be placed in plastic bags and decontaminated or disposed of at Versar's facility in Springfield. Employees will ensure that their hands are washed as soon as practical after any field activity. During onsite activities, personnel will not be allowed to smoke or consume food or liquids until all activities are completed, soiled outer clothing are removed, and hands are washed.

7.0 EMERGENCY PROCEDURES

Skin contact - areas will be washed with soap and water immediately.

Personnel injury - the onsite testing and sampling personnel will include at least one person trained in administering first aid and they will be familiar with the location of the hospital in Freehold, New Jersey.

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Emergency Contact:

For Testing Personnel:

S. S. Papadopulos (SSP&A) - day: 301/468/5760

night: 301/299/7754

For Sampling Personnel:

J. Richards (Versar) - day: 703/750-3000 extension 6748

night: 703/533-0338

Exposure to Hazardous Material:

For Testing Personnel:

Mark Howland (SSP&A), onsite supervisor

For Sampling Personnel:

Eric Juergens (Versar), onsite supervisor.

8.0 SITE SECURITY

The site is not securely fenced or guarded, except for a clay cover over the waste. Wells are all protected by locks and a key must be obtained for access.

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